a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JUNE, 1956

TUFTED TEXTILES—1956

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AFTER TEN YEARS: **TOP PERFORMANCE... VIRTUALLY NO MAINTENANCE COSTS**

Yarn production costs go down when spindle performance stays high. Recent surveys demonstrate that Marquette Anti-Friction Spindles stand up through long service and continuous operation. In the mill shown above, replacement and repairs averaged less than a penny per spindle over a ten-year period.

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CURTISS-WRIGHT
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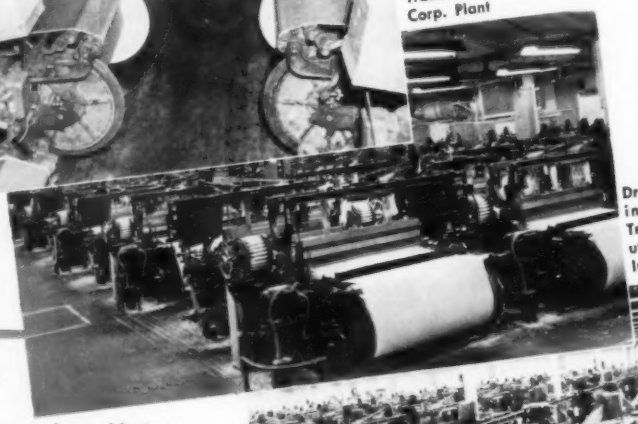
is assuring maximum weaving efficiency in leading mills

Thousands of Diehl Power Transmitters are operating DRAPER LOOMS in leading textile mills. Many have been in continuous operation for five years.

Draper X2 looms operating with Diehl Power Transmitters in Cone Mills Corp. Plant



Draper XD looms operating with Diehl Power Transmitters at Bibb Manufacturing Company, Columbus, Georgia.

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- "Stored energy" for smooth, rapid starts and positive picking.
- Precision braking.
- Minimum fluctuations of speed and motor current.
- Lower power consumption.
- Lower motor heat losses.
- Eliminates current regeneration.
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. . . all of which adds up to increased mill production, improved quality of cloth, lowered operating costs and long, trouble-free service.

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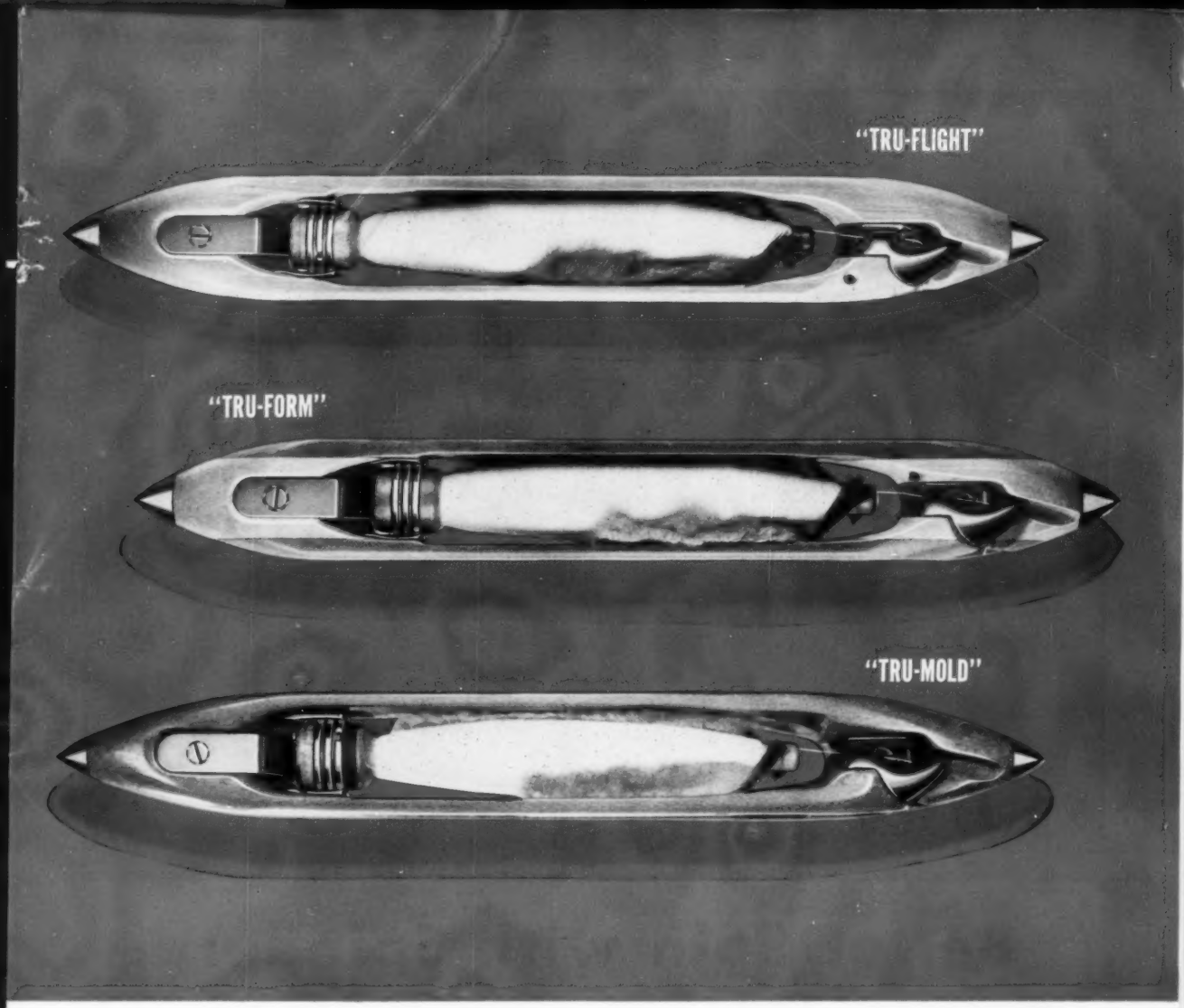

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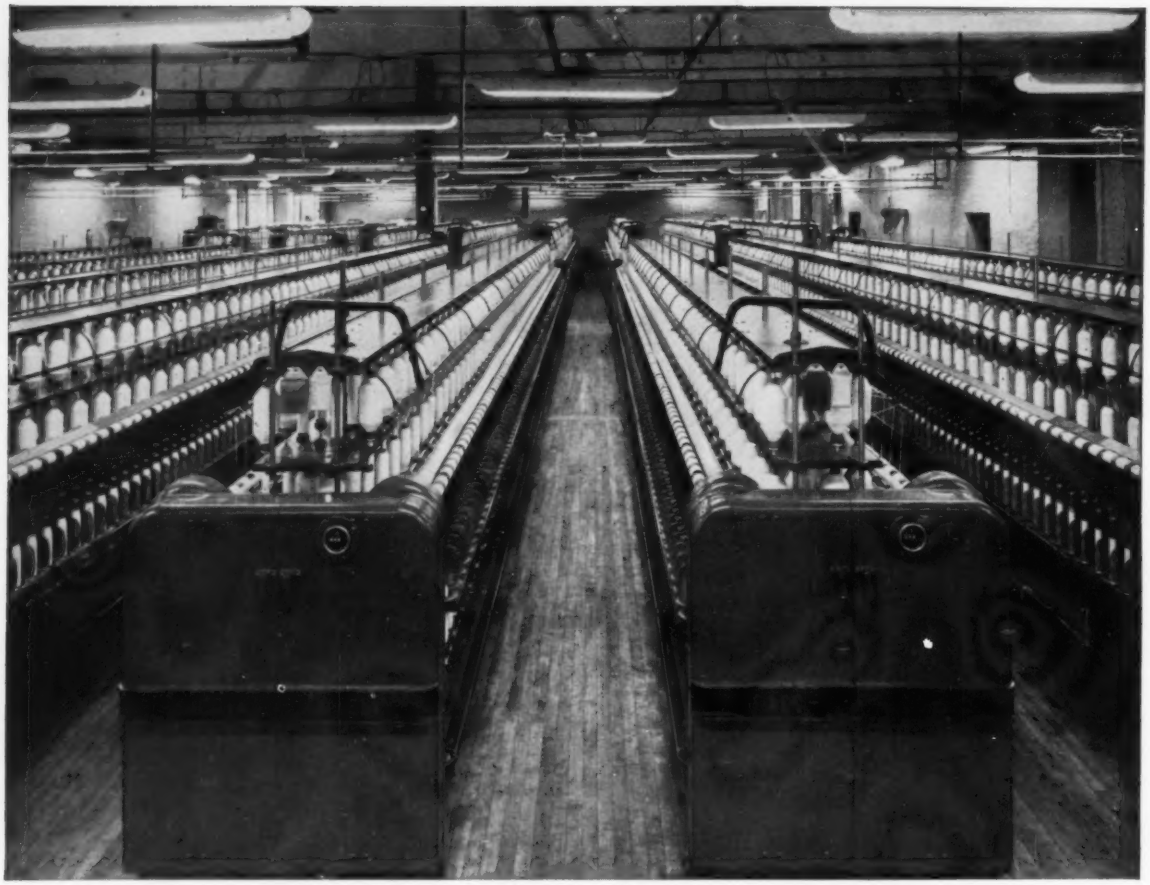

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TEXACO

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FOR THE TEXTILE INDUSTRY

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NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 120, No. 6
June, 1956

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Shorts and Remnants

By J. C. C.

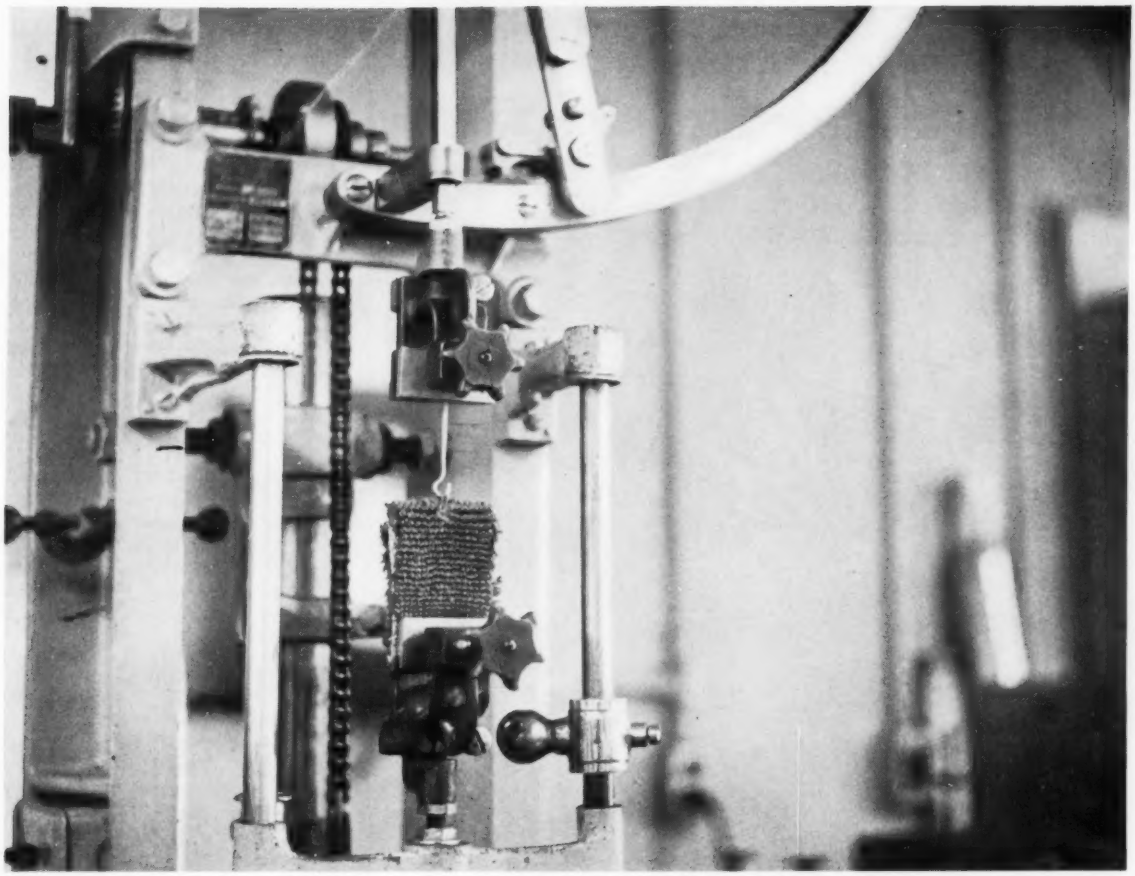
► Then, of course, there is June—"June in January," "Give me a Night in June," June brides, June bugs, and all that. It's nice that June rhymes with moon, tune, soon, and a few things that set the song writers going.

► And speaking of song writers, there's that one about editors, researchers, and a few other folks, that goes "Come down, come down from your ivory tower." We always thought that it was "ivy tower" to denote seclusion. Ivory sounded too much like soap but we looked it up. "Ivory tower" is right for that secluded spot. The song is right. We had it mixed up with the Ivory League or something.

► Anyway here we are with another Tufted Section in our June issue, and the tufted boys enter another year. We think the best one was the tufted mill man who said if he had a little extra dough he would buy some looms. Last year the weaving boys were all trying to get into tufting. Next year it will be tricot or nonwoven. Never a dull moment. Tune in next June. Will Tufty get her rug? Who wins the bed spread? We could go on like that, but maybe we'd better not. Anyway, look over this issue. We hope you like it.

► While we are on that subject, we just wrote a letter to some folks who put out all the dough to present the ad pages, telling about the advertiser we lost because of the words "Formerly COTTON" under our title and the mill man who said we dropped our cookies when we changed our name to TEXTILE INDUSTRIES. But then, there it is; so call it TEXTILE INDUSTRIES, TI, or whatever you wish, just so you put us down as #1 whether you are tufted, spinning, weaving, knitting, dyeing, finishing, slashing, engineer, researcher, or machinery peddler, or whether you are in the South, New England, New York, Minnesota, South America, Europe or wherever—just "Keep your eye on TI."

► You see **M. H. Onuke,** Pres., Do-Yei Sheji Kabushiki Kaisha, Osaka, Japan, wrote a special letter to find out about equipment of Lindley &



How to strengthen your hand in rug backings

The last few years have brought many changes in rug backings. The use of latex—either natural or synthetic—instead of starch, has led to backings of greatly improved binding strength, dimensional stability, hand and body that fully resist raveling, wrinkling, washing, mildew and age.

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INCORPORATED
GREENVILLE, SOUTH CAROLINA

Shorts and Remnants

Co., Inc., Mineola, N. Y. (Mar. '56). H. V. Bontweverij "De Batavier," V/H J. Willink & Paschen, Winterswijka, Netherlands, wrote a nice letter about "ultrasonic vibrator for research and application in wet processing" (July '55). At the risk of becoming the "Ultrasonic Journal," we also wish to note a current inquiry from **David Kaye,** Transocean Commerce, Inc., New York, N. Y., who read with great interest "Ultrasonics in the Textile Industry—a Progress Report" (Mar. '55) and wanted extra copies.

► Not that we aren't serious about ultrasonics, but then old S & R still thinks the fellow who invented the wheel was quite a guy. And if the guy who figured out time—minutes, hours, days, etc.—will figure out for us where it goes, we'll say he's a great guy, too.

► Maybe we got flip about Geiger counters and uranium hunters in this here column, but we were only passing on to you what comes over our desk. Nothing's too good for Ole S & R's readers. **Vern Palen,** North American Philips Co., Inc., New York, N. Y., says ". . . Uranium hunting is not one of our pet promotions. X-ray analysis is so broad in its applications. . . . " O. K., Mr. Palen, if all that is true, we'll have our Bill Hoffman come around with an ad rate card, anytime.

► Anyway, S & R started something mentioning this anniversary business. So, congratulations to another good advertiser, New York & New Jersey Lubricant Co., and Pres. **Joseph H. Bennis,** who celebrated on April 21 the 60th birthday of Non-Fluid Oil. Also, the ad agency for Wheeler Reflector Co., Boston, Mass., says that a 75th anniversary is "rare-

Mr. Lamothe

ly news," but we disagree; so we congratulate them, too, and publish herewith the picture of **John H. Lamothe,** Exec. V. P. of said lighting

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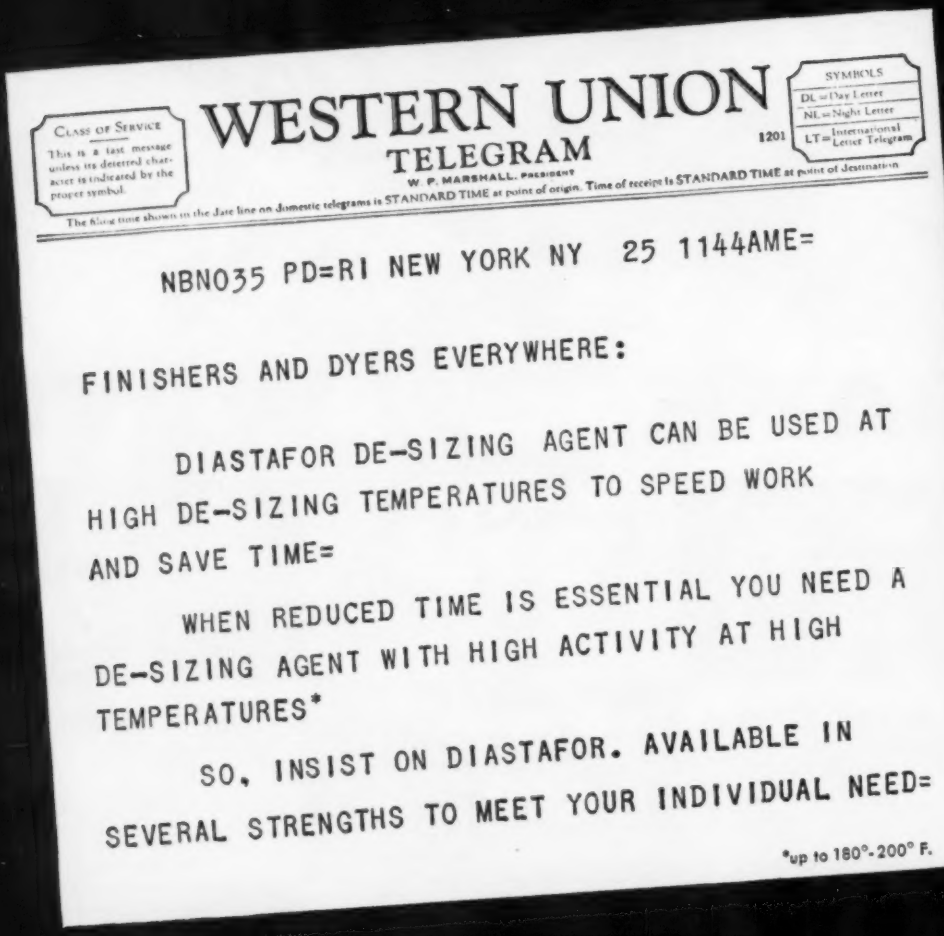

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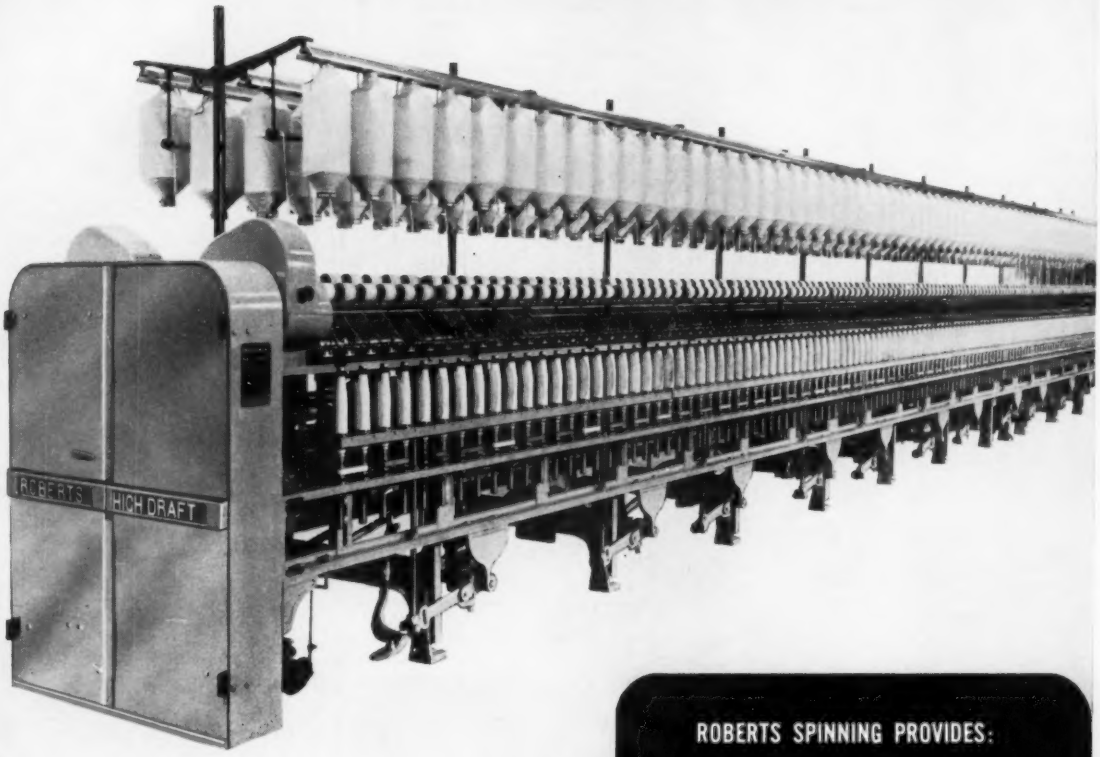

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For further information use Handy Return Card, Page 237

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Metal Protection for Wood Turnings

J. N. ANDERSON, *Treas.*
LAWRENCE, MASS., U.S.A.

Shorts and Remnants

fixture manufacturer, who announces this anniversary for his company.

► While we are on it, the picture below shows **Dr. Warren Stubblebine,** director of research and development (standing), leading a panel discussion

on "Moisture Extraction in Textile Finishing" with Stowe-Woodward (Newton, Mass., and Griffin, Ga.) sales engineers: (l. to r.) **Asa F. Fisk, Fletcher P. Thornton, Jr.,** and **James T. Gordon,** at Stowe-Woodward's seventh annual sales conference.

► While we aren't going back into the trunk to locate that old pair of garters, we do feel that **Alfred A. Gmeiner,** Wauwatosa, Wis., has a point in that "some manufacturers still persist in putting on top tight bands" and that "the tension of the top band on shorts and men's socks becomes so severe at the end of the day, I believe it is due to retarding of the flow of the blood stream."

► Also, if things don't "seam just right," take a tip from **Mrs. Sylvia Sherlin,** Athens, Tenn., who writes for our "book on seaming." She says " . . . I have been seaming for about 16 years but I feel like there's a lot I could learn. . . ."

► New England is still in there pitching. We read recently of a Mardi Gras jamboree staged to attract industrial attention to Woonsocket, R. I., and the Industrial Development Commission of said city sends this

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Locate your plant in
WOONSOCKET
the spunkiest city in the U.S.A.
WORKING for JOBS for the finest people anywhere
THE INDUSTRIAL DEVELOPMENT FOUNDATION OF GREATER WOONSOCKET

picture of a typical poster at entrance of the city to welcome guests.

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A. Marti, Dir. Institut Textile de France, Paris, asks permission to reproduce from "The Behavior of Cot-

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JOHNSTON MANUFACTURING CO.
DAN RIVER MILLS
COWIKEE MILLS, INC.
COMPANIA COLOMBIANA DE TEJIDOS
ABBOTT WORSTED MILLS

Bahnson Collecto-Vac

Mill-proved Collecto-Vac features offer you more for your investment as standard equipment

IN MATERIALS: Attractive anodized aluminum flutes — *no warpage or cracking.* Rugged 14 gauge stamped steel collection box.

IN DESIGN: More uniform suction pressure. Scroll type fan discharge to *disperse* motor alley heat, not *concentrate* it.

Belt driven fan for flexibility, or internal motor for economy. (A scroll type fan is used with both designs.)

IN PERFORMANCE: Greater cleanliness and collection of flying lint. Positive end collection the length of the frame. Lower horsepower at same CFM and suction pressure.

FREE BULLETIN

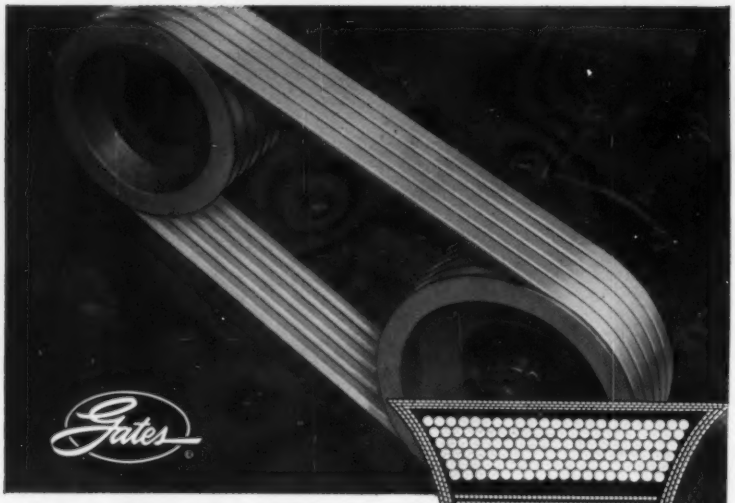
Write us today for our free booklet containing detailed information on the new Bahnson Collecto-Vac.

Bahnson COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING / CLEANING
VACUUM COLLECTION

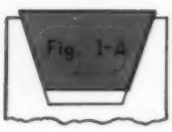
91 of the top 100

Of the nation's 100 top textile manufacturing firms, 91 are users of Bahnson equipment!



Concave sides make V-belts last longer

The sides of every Gates V-belt (Fig. 1) are concave—a precisely engineered curve that greatly increases V-belt life. Here's why:



On the bend around the sheave, the concave sides of a Gates V-belt fill out and become straight (Fig. 1-A). Thus the belt makes full contact with the sides of the sheave, grips the sheave evenly, and wear is distributed evenly across the sides of the belt. Uniform wear lengthens belt life; keeps costs down.

Make this simple test

Take a straight-sided belt (Fig. 2) and bend it. Feel the sides at the bend; they bulge out. Now picture this bulge in the sheave groove (Fig. 2-A). It is easy to see that the belt makes uneven contact at points indicated by arrows. Naturally, wear is greater at these points. Uneven wear shortens belt life; increases belt costs.

Cut down-time and V-belt replacement costs. Specify belts that grip evenly and wear longer . . . specify Gates Vulco Rope—the V-belt with concave sides. There is a Gates distributor nearby who will quickly supply the belts you need. The Gates Rubber Co., Denver, Colorado

—World's Largest Maker of V-Belts

TPA 86

Gates VULCO ROPE Drives

Shorts and Remnants

ton—Synthetic Blends" (Sept. '55). **David A. Lovekin,** ad agency executive, Phila., likes cartoons from "Purchasing for the Textile Industry" (Feb. '56) and asks to reprint in Phila. Gear Works Sales Letter. That's O. K., just mention TI.

Reprints of that purchasing article are still getting around. **Emmet Steger,** Sherwin-Williams Co., Charlotte, N. C., writes for twelve. **James P. Coleman,** The Bouligny Co., also a Charlotte firm, read "with much interest" and requests eight copies for sales personnel to "thoroughly digest."

Whatever it means, The Cotton Shop, New York, N. Y., is devoting its advertising these days to silk Shantung dresses. National Cotton Council, please note.

And advertisers had better watch their language. A good Georgia mill bought some motors advertised as "lint-free." Came time to clean them up about ten years later and they called the motor manufacturer. Seems they expected them to clean the motors of lint—free.

Any good mill wanting to quote on a "novelty sheet" write to **Bill Alexander,** Valentine-Radford, Advertising, 1016 Central St., Kansas City, Mo., who has a client with an idea.

Tracing Bad Work

"Sometime ago you published an article on the testing of draw frame slivers, showing the patterns, which result from mechanical faults, on the graphs produced on the Saco-Lowell and Uster testers . . . we would be extremely grateful if you would send us . . . this article. . . "

R. LAIDLOW
Cia. Ind. "El Salvador", S.A. de C.V
Mexico, D.F.

► "How One Mill Traces Bad Work" [Dec. '55] was reprinted with copies still available.

TI Now In Dutch

"One of our members attracted our attention in behalf of the monthly Spil en Spoel on 'The Story of Good Running Work' [TI Aug. '55]. I took over your suggestion at the end of this paper and translated your ideas in two articles, which I had printed in our paper. I am very grateful. . . "

DR. A. L. VAN SCHELVEN
Stichting Textielvak
Hengelo (O) Holland

(Continued on page 18)

Honor Roll of
PROGRESS
Alice Mfg. Co., Easley, S. C.
Greenwood Mills, Ninety-Six, S. C.
Bates Mfg. Co., York Div., Saco, Maine
Orr Mills, Anderson, S. C.
Monarch Mills, Union, S. C.
Textron Southern Riverside Plant, Anderson, S. C.
Riegel Textile Corp. Trion, Georgia
Riegel Textile Corp. Ware Shoals, S. C. Division
A. M. Smyre Mfg. Co., Gastonia, N. C.
Russell Mfg. Co., Mill #4, Alexander City, Ala.
Crown Cotton Mills, Dalton, Georgia
John P. King Mfg. Co., Augusta, Georgia
Dixie Mercerizing Co., Chattanooga, Tennessee
Swift Spinning Mills, Columbus, Georgia
Erwin Mills, Inc. Plant #3, Coolemee, N. C.
Cannon Mills Co. Plant #1, Kannapolis, N. C.
Mfg. Hartmann & Fils, Munster Haût-Rhin France
Union Cotonniere, Ghent, Belgium
Cucirini Cantoni Coats, Milan, Italy
Werthan Bag Corp., Nashville, Tenn.
Clark Thread Co. Inc., Clarkdale, Georgia
Bibb Mfg. Co. Osprey Mill, Porterdale, Georgia
LaFilature Et Le Tissage, Mehalla-Kubra, Egypt
Textiles, Inc. Mutual Plant, Gastonia, N. C.
Pacific Mills, Lawrence, Mass.
Cia. Textil "LaFe", Torreon, Coah, Mexico
Bates Mfg. Co., Edwards Division, Augusta, Maine
Cia Col. de Tej. "Rosellon", Medellin, Colombia, S. A.
P. H. Hanes Knitting Co., Winston-Salem, N. C.
Pepperton Cotton Mills, Jackson, Georgia
Cheraw Cotton Mills, Cheraw, S. C.
J. & P. Coats, Ltd., Glasgow, Scotland
Groves Thread Co. Inc., Gastonia, N. C.
Aurrera S. A., Mexico, D. F., Mexico
Hartwell Mills, Hartwell, Ga.
San Manuel, S. A., Puebla Pue, Mexico
Amazon Cotton Mills, Thomasville, N. C.
Gold-Tex Fabric Corp., Rock Hill, S. C.
Delaware Mills, Inc., Frederica, Delaware
Burlington Mills (Goodall-Sanford Div.) Hot Springs, N. C.
Collins & Aikman Corp., W. Barrington, R. I.
Samuel Hird & Sons, Inc., Garfield, N. J.
French Worsted Co., Woonsocket, R. I.
Francois Masurel Freres, Tourcoing Nord France
Linen Thread Co., Blue Mountain, Ala.
Silkose, Ghent, Belgium
Ponemah Mills, Taftville, Conn.
Denison Cotton Mills, Denison, Texas
Jackson Mills, Iva, S. C.
Dyersburg Cotton Products, Inc., Dyersburg, Tennessee
West Boylston Mfg. Co., Montgomery, Ala.
Fitchburg Yarn Co., Fitchburg, Mass.
Hamilton Cotton Co., Ltd.
West Point Mfg. Co., Shawmut Mills, Shawmut, Ala.
Celanese Corp. of America, Fairview Drive, Charlotte, N. C.
Valley Mills, Columbiana, Alabama
Piedmont Mop Co., Charlotte, N. C.
Pepperell Mfg. Co.
Wiscasset Mills, Albemarle, N. C.
Pilot Mills Co., Raleigh, N. C.
Cone Mills Corp., Minneola Plant, Gibsonville, N. C.
Marion Mfg. Co., Marion, N. C.
Hamilton Cotton Co., Ltd., Hamilton, Ontario, Canada
China Grove Cotton Mills Co., Mill #3, China Grove, N. C.
Quaker Meadows Mills, Inc., Hildebran, N. C.
Falls Mfg. Co., Granite Falls, N. C.
Alabama Mills, Inc., Clanton, Ala.
Currie Mills, High Falls, N. C.
NOW
AFTER ONLY THREE YEARS
MORE THAN 70 MILLS, OPERATING
OVER 450,000 SPINDLES OF
SACO-LOWELL
GWALTNEY SPINNING
are producing stronger, more even yarns of highest possible quality at important reductions in cost.
There is a definite Gwaltney trend in the spinning industry. A Saco-Lowell Sales Engineer will be glad to discuss it with you.
SACO-LOWELL
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE; and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

For further information use Handy Return Card, Page 237

Chicken Feed ?

...not the way one mill looked at it

When did you last figure the annual labor costs of oiling one plain bearing in your mill? The figure shown above came from a leading textile manufacturer . . . and it doesn't include the cost of lubricant or material spoilage. Just multiply this figure by the number of bearings involved, times the years of service . . . and you'll agree the sum total doesn't represent "chicken feed." Perhaps an Authorized Fafnir Distributor can show you how to make substantial savings. Let him look over the bearings in use in your plant. Fafnir Distributors have specialized experience that enables them to consider bearing problems from your viewpoint. The Fafnir Bearing Co., New Britain, Conn.

Fafnir Plya-Seal Ball Bearing, in which synthetic rubber washers, held in place by spring steel retaining rings, make the most perfect seal ever attained for ball bearings . . . locking in lubricant and shutting out dirt and moisture.

Fafnir Treadle Roll Ball Bearing Unit equipped with Plya-seals. Carefully prelubricated at the factory with the correct amount of specific lubricant to resist high humidity and oxidation. Sizes for all standard makes and models of looms.

FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

Fugitive colors have you going around in circles?

ALTHOUSE

LEADING SPECIALIST IN DYES FOR COLORFASTNESS,

CAN SHOW YOU THE SURE WAY TO PROFITS

ALTHOUSE special dyes and special dyeing techniques assure quality performance for cottons, rayons, nylons, other synthetics and most blends.

For 40 years Althouse researchers have pioneered in raising textile industry standards of COLORFASTNESS.

This record of leadership assures highest quality performance when you specify these famous, exclusive Althouse dye specialties:

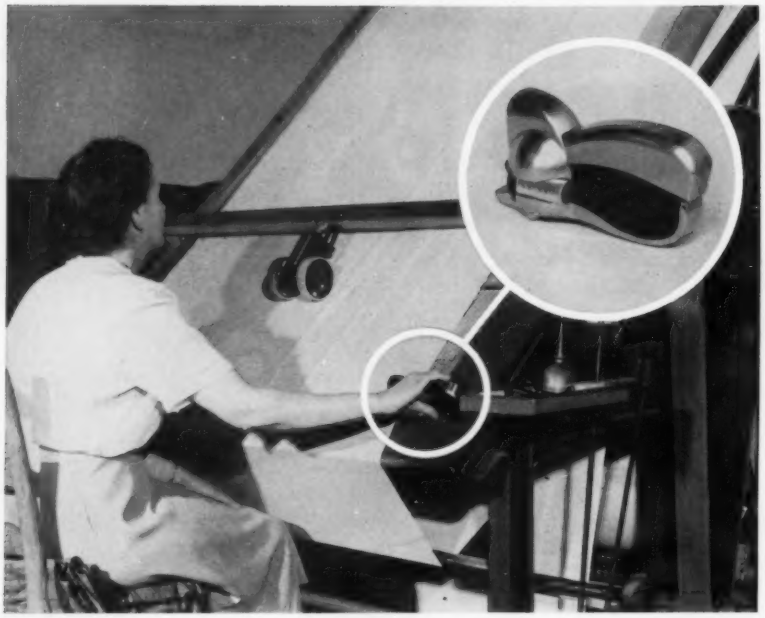
Superlitefasts
Azoanthrenes
Supernylites
Nylanthrenes
Nydyes
Sol-Aqua-Fast

ALTHOUSE

Your key to lasting color beauty

ALTHOUSE CHEMICAL COMPANY, READING, PA.

Division of Crompton & Knowles Loom Works



Is your inspection room floor covered with $1,000 bills?

Time study of the Mark-Fix 3 by one independent mill has shown more than $13,000 savings in production cost can be had in the first year on approximately 60 inspection machines. This savings was over and above installation cost. More than $20,000 per year savings in production could be expected in succeeding years.

The Mark-Fix 3 is a semi-automatic tagging device. Tags are standard length, and available in five different colors, easily interchanged. Tagging with Mark-Fix 3 does not damage the selvage.

Mark-Fix 3 is popular with operators as well as mill owners. Light in weight, very easy to operate, it reduces fatigue—and marks 4 or 5 flaws in the time now needed to mark only one.

Detailed mechanical and performance specifications sent on request.

USTER

USTER CORPORATION
2516 Wilkinson Blvd.
Charlotte, N. C.

United States Sales Offices:
Atlanta, Georgia
Needham Heights, Massachusetts

CONTINUOUS QUALITY CONTROL IN MANUFACTURING

Shorts and Remnants

(Continued from page 14)

Loom Maintenance

" . . . Please advise us if you have any articles pertaining to the maintenance of looms. We believe that we have seen, in one of your issues, an article showing the method some mills use and forms that they have for periodic checking. . . . "

W. F. BARTELT
Ferdinand W. Mostertz & Sons
Philadelphia, Pa.

► Now, loom maintenance has always been a favorite subject. A basic book, "Draper Loom Fixing," is a popular subscription premium, reprinted from TI pages. The newest reprint (no charge with new or renewal subscriptions) is "Weaving Defects" pictured below.

One of our subscription men said he didn't think this would be popular as the mills he worked were already weaving more defects than desired.

Vacuum Cleaning for Knitting

" . . . there is a picture (Apr. '56) illustrating vacuum cleaning keeps knitting areas lint- and dust-free. We would like to obtain more specific information. . . . "

IRVIN KUSHNER
Carthage Knitwear Corp.
Philadelphia, Pa.

► U. S. Hoffman Machinery Corp., New York, made that equipment.

Correct Yarn Twists

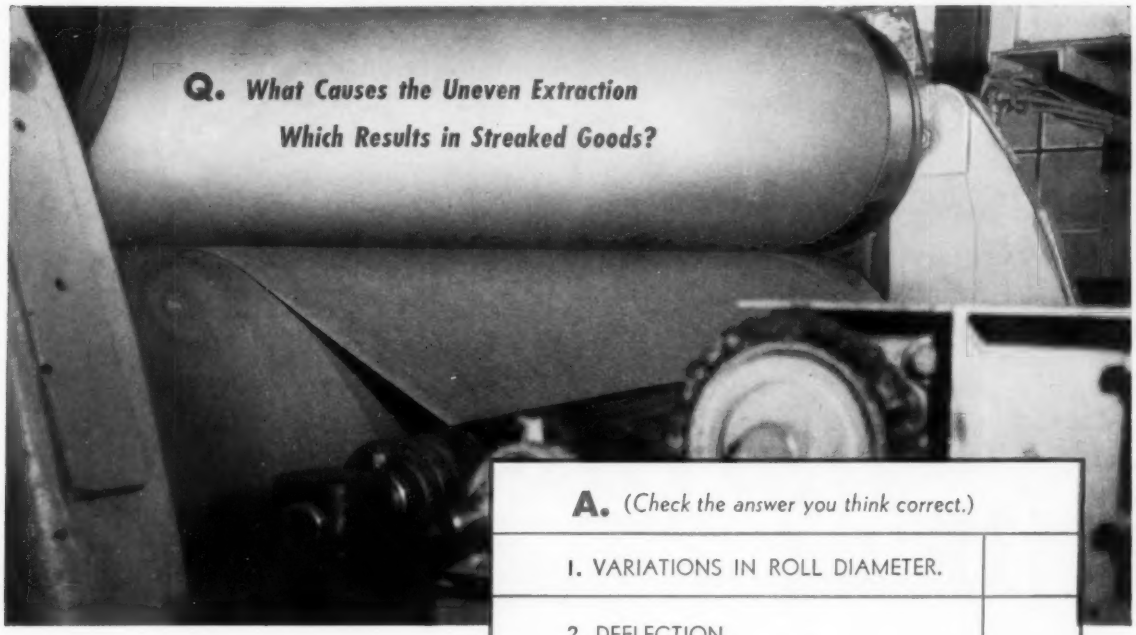
"Please send us two tear sheets of the article, 'How to Determine the Correct Twist for Yarn' (Mar. '56) . . "

P. B. STEPHENS
Manager, Coats & Clark, Inc.
Pelham, Ga.

(Continued on page 22)

STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost



A. (Check the answer you think correct.)	
1. VARIATIONS IN ROLL DIAMETER.	
2. DEFLECTION.	
3. MACHINE FATIGUE.	

You'll find the correct answer in these Maintenance Tips

Any one of the answers shown can be correct, for actually, these are the three main causes of uneven pressure. It is important to correct all of these conditions where they exist, for uneven pressure results in uneven moisture extraction, shading, excessive roll wear, and even damage to the bearings or the machine itself.

When there is excessive pressure at a particular point in the nip, a check of the roll diameter at this point will determine whether or not the roll should be reground to a uniform diameter. When, however, pressure is excessive on both ends of the rolls, the cause is probably deflection, and the pressure should be reduced, or the roll rebuilt on a more rigid core. When a careful check of the roll fails to indicate any condition which could cause uneven pressures, it is well to check over the machine itself. Fatigue of pneumatic and hydraulic devices, such as leaking gaskets or frozen pistons, can cause uneven pressures.

Your Stowe-Woodward Sales Engineer will be glad to advise you on any problem regarding the care, selection or operation of rubber covered rolls.

"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA

AMERICA'S LEADING SYNTHETIC DETERGENT

Smart "clock-watchers" made

Nacconol® SL

the largest selling liquid detergent in the textile industry*

Time and money conscious mills know you can save handling time and costs too with Nacconol SL. Being a liquid concentrate, it is easy and clean to handle *and* requires no dissolving. Simply add water to secure the desired working concentration.

And remember—you get more cleaning-power-per-dollar with Nacconol SL (based on an active ingredient basis compared with most dry products).

Why not join the mills that are cutting production costs with Nacconol SL?

Other popular forms of Nacconol for wet processing include Nacconol DB, Nacconol NR and Nacconol NRSF.

* Alkyl Aryl Sulfonate

Send for your Sample

Nacconol

NATIONAL ANILINE DIVISION

ALLIED CHEMICAL & DYE CORPORATION

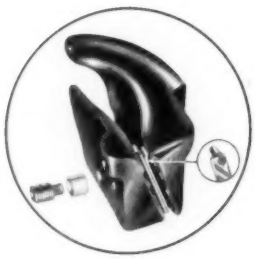
40 RECTOR STREET, NEW YORK 6, N.Y. • HAnover 2-7300

Boston 16, Mass., 130 Commonwealth St. Kingsley 7-0400 · Charlotte 1, N.C., 200-205 West First St. Elbert 3-4221
Providence 3, R.I., 15 Westminster St. DExter 1-2090 · Richmond 19, Va., 8 North Fifth St. Richmond 7-1930
Philadelphia 6, Pa., 308-314 S. Front St. Lombard 3-4382 · Columbus, Ga., Columbus Interstate Bldg. Columbus 7-4512
Los Angeles 58, Cal., 4914 Loma Vista Ave. LOgan 8-2257 · Greensboro, N.C., Jefferson Standard Bldg. GReensboro 2-2518
San Francisco 3, Cal., 517 Howard St. SUtter 1-7387 · Chattanooga 2, Tenn., James Bldg. Chattanooga 4-4347
Portland 9, Ore., 730 West Burnside St. Beacon 1933 · Atlanta, Ga., 1376 Spring St., N. W. Elgin 0800
Chicago 54, Ill., The Merchandise Mart Superior 7-3387 · New Orleans 12, La., Carondelet Bldg. Raymond 7238
Toronto 2, Can., 137-143 Wellington St. W. Empire 4-6495

Allied Chemical

INCREASE Your XD Loom *Profits*

With Southern Shuttles



Eye #900-11 with rear tension and Nyloc.

Eye #900 P with single tunnel.

Eye #900 PW two tunnel.

There Is No Better Shuttle Made!

Southern Shuttles are made of the finest quality selected dogwood . . . Tempered by Southern's exclusive process to prolong their life. XD Shuttles are covered with the best quality fibre or Stehide for increased performance and wearability . . . bonded with high frequency process to give greatest strength.

Magnum type tips with reverse taper insure positive holding . . . produced from toughest alloy steel with points induction hardened to retain original shape.

Grips are produced in our plant . . . under rigid quality control standards to eliminate breakage and wear.

Tension eyes are engineered for fast and positive threading . . . Southern offers advantage of interchangeable plain eyes both single and double tunnel for spun and novelty yarns.

Milled groove tension pads as illustrated insure first pick tension . . . positive tension adjustment maintained by exclusive "Nyloc" feature. Hard chrome plated pins and positive locking nuts . . . used throughout assuring trouble free service.

Uniformity of every shuttle guaranteed . . . by quality control methods and numerous inspection procedures. Each employee trained to be "Quality Conscious".

Long established warranty . . . against defects in material and workmanship proves their superiority.

Stehedco
STEEL HEDDLE MFG. CO.
PHILA. 32, PA.
SOUTHERN SHUTTLE DIV.
GREENVILLE, S. C.
Southern

TEMPERED

QUALITY Stehedco CONTROL

STEHIDE

World's largest manufacturer of all type Shuttles • Comparison made them famous

Other Plants and Offices: Granby, Quebec, Canada—Lawrence, Mass., Providence, R.I. Greensboro, N.C.—Atlanta, Ga.—Textile Supply Co., Dallas, Texas
Albert R. Breen, Chicago, Ill.

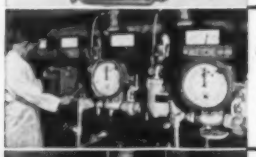
6-S-56

√ Are you saving all you can with Liquid Meters?

Here's a check-list of savings made every day with accurate metered measurement of more than 150 industrial liquids. Chances are you can use at least five of these ideas in your plant:

√ **AUTOMATIC BATCH MIXING:** Meter liquids directly to tanks or kettles with Neptune Auto-Stops. Push buttons to set quantity . . . meter cuts off accurately, automatically. No waiting for weigh tanks to fill, no "inching" up to gauge marks, no wrestling with bags or buckets.

√ **AUTOMATIC PROCESS CYCLING:** Auto-Stop meters can be equipped with electrical switches to start or stop pumps, agitators, etc. . . . automatically. Saves times, labor, power . . . with closer control.



√ **ELIMINATE REJECTED BATCHES:** In one leading pharmaceutical plant, Neptune meters eliminated human errors, saved enough costly ingredients to pay for the meters in less than a month! How's *your* "reject" rate?

√ **EASIER INVENTORY, COST CONTROL:** Neptune Meters at key check points keep track of inventory, interdepartmental use, production rates, etc. They put a stop to waste, verify full measure received or delivered.

√ **AUTOMATIC DRUM FILLING:** This Neptune fills drums, radiators, fuel tanks, etc., with exact quantity every time you press the handle. Saves time, labor, prevents spills or "shorts."

√ **OIL BURNERS, DIESELS:** Use these low-flow meters instead of bulky day tanks to measure fuel consumed by boilers, melting furnaces, diesels, etc.

√ **WATER CONDITIONERS:** Trident meter's wary eye tells when ion exchange unit needs recycling. See if yours has trouble-free Trident.

√ **TANK TRUCK DELIVERIES:** Many industrial liquids can be delivered by metered trucks with greater ease and accuracy than markers, gauges or sticks. Investigate Red Seal meters.

Give you any ideas?

TELEPHONE OR WRITE NEAREST NEPTUNE BRANCH OFFICE FOR QUICK DETAILS—

Or write for Metering Data Book 566-RFP

NEPTUNE METER COMPANY
19 West 50th Street, New York 20, N. Y.

Branches in:
ATLANTA • BOSTON • CHICAGO • DALLAS • DENVER
NO. KANSAS CITY, MO. • LOS ANGELES • LOUISVILLE
PORTLAND, ORE. • SAN FRANCISCO

In Canada: NEPTUNE METERS LTD., TORONTO 14, ONTARIO

neptune Liquid METERS

Shorts and Remnants

(Continued from page 18)

Drying, Curing at 1000 F

"We remembered seeing an article which we believe was in your magazine regarding a new drying and curing oven which operates at 1000 degrees F. . . . "

PAUL H. SIMON
Manager
Geltman Sponging Corporation
Los Angeles, Cal.

► A hot item but not in TI. We referred Mr. Simon to our advertisers making drying ovens.

Automatic Folding, Pressing

"We manufacture Polo Shirts. Can you furnish any information concerning the automatic folder and pressing machine, the kind that operates on a conveyor belt. I have seen this machine advertised in your magazine."

IRVING NEWMAN
Southern Knitwear Mills, Inc.
Charlotte, N. C.

► We searched the ads. No go. But we did announce in Nov. '55 a folder and presser of New York Pressing Machinery Corp.

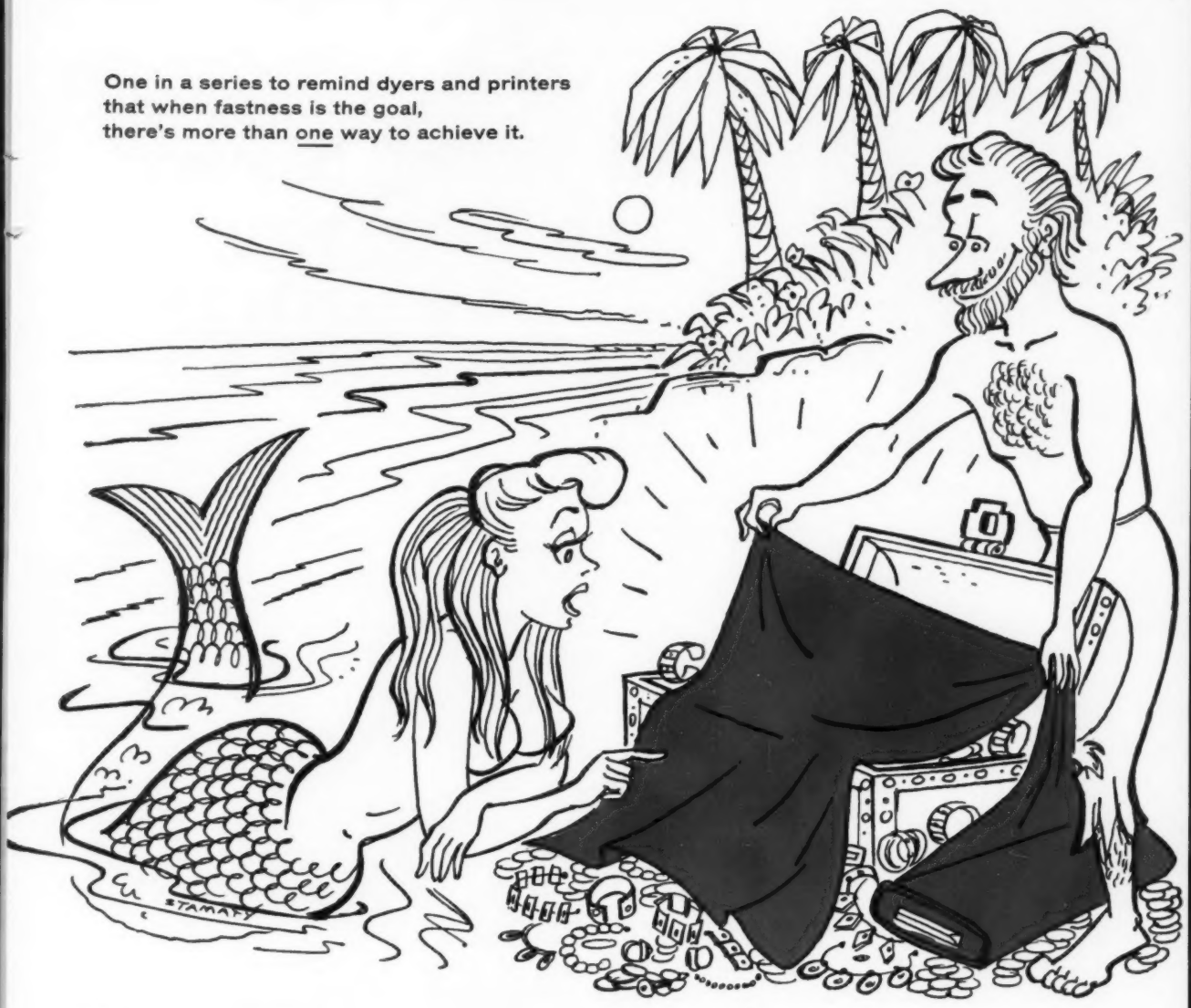
We Don't Know It All, But Ask Us Anyway

Fred A. Walker, Sandoz Chemical Works, Inc., Fair Lawn, N. J., writes for three copies of "Practical Piece Goods Mercerizing" (Mar. '55). In the same mail **Joe McGuinness** of Dexter Chemical Corp., New York, N. Y., who got reprints of this article, says they are already getting requests for "Practical Warp Mercerizing" (Apr. '56) by the same author, **Sidney M. Edelstein.**

An Oct. '55 article on nylon and acetate tricot dyeing mentioned a fluorescent whitening agent (Whitex N). **Semper Katsuma,** Shinyei Kuto Kaisho, Kobe, Japan, wants to know the maker. So if Burkart-Schier Chemical Co. wants to ship to Japan, here's a prospect for them.

You all keep sending in the requests on the handy return card for data on ads, literature, and new equipment. **John T. Wiser,** Rockville (Conn.) Processing Co., digs pretty deep to ask for "#2 of a series on Fume Vapor and Dust Exhaust." It was in the Westinghouse Sturtevant ad p. 22 Apr. '56. **Milton Berman,** B & S Knitting Mills, wants more on Jacquard Knitting Machine ad. We found no ad but a news item. Let us

One in a series to remind dyers and printers
that when fastness is the goal,
there's more than one way to achieve it.



"But, is the color fast?"

That's *all* the lady wants to know... the class of dye is up to you! Azoene® Fast Red KB Salt coupled with Naphthol AS-D produces the bright, clear red here and even a mermaid wouldn't want it any faster!

There's an ideal dye for each job and often it's one of the Azoenes—the Fast Color Salts and Bases. Without the slightest risk to consumer satisfaction, Fast Colors may help you produce at *lower cost* or *greater efficiency*. Or they may *upgrade* your line appreciably for a relatively small increase in cost. Talk over your next dyeing job with one of our technically trained representatives. He'll give you a scientific, unbiased opinion.

bu ALLIANCE

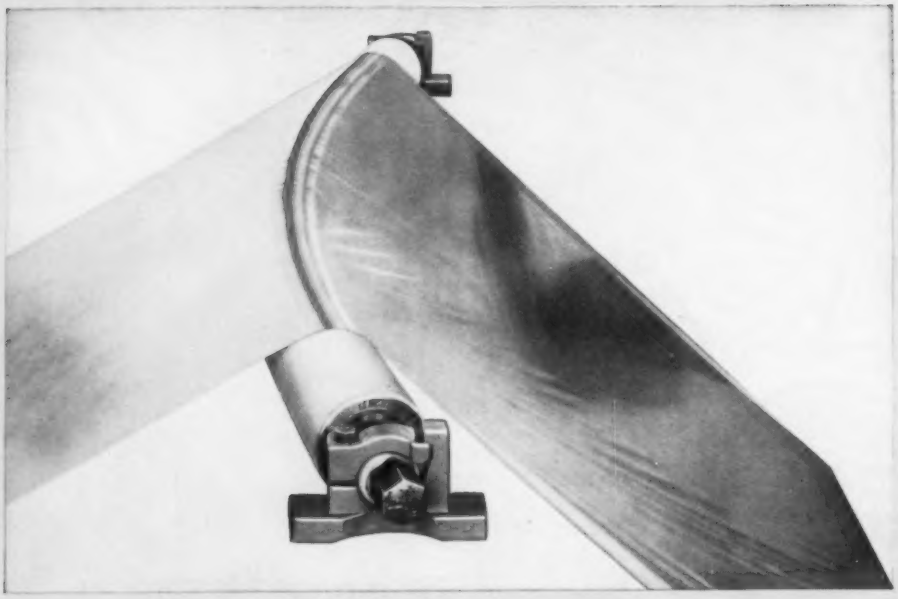
BLACKMAN-UHLER CO., SPARTANBURG, S. C.
ALLIANCE COLOR & CHEMICAL CO., NEWARK, N. J.
DIVISIONS OF THE ANDOVER COMPANY

STOCKS AT: CHATTANOOGA, TENN., GREENSBORO, N. C., CHARLOTTE, N. C., COLUMBUS, GA., PROVIDENCE, R. I.

Mount Hope SYSTEM

INCORPORATES

"Free Wheeling" Expanders TO HELP YOU BEAT COMPETITION!



THE MOUNT HOPE "FREE WHEELING" EXPANDER holds your fabric to full width and free of wrinkles.

For Maximum Production—Lower Cost—Minimum Seconds—USE the Complete MOUNT HOPE SYSTEM

Write for a Production Cost Survey of your plant.

Another Service To You!

New Mount Hope **Southern** Repair Shop to give you fast, convenient service.

Originator of Modern Expanders • Leader in Cloth, Paper and Plastic Handling

SOUTHERN REPAIR SHOP • CHARLOTTE, N. C.

MOUNT HOPE MACHINERY COMPANY

152 FIFTH STREET, TAUNTON, MASS.

with exclusive Plastavon Sleeves!

When you use SONOCO Dytex Tubes, with Plastavon Sleeves, you employ a product backed by laboratory and in-use development proven by over 20 years' experience.

SONOCO Dytex Tubes are accepted by the industry for all standard forms of package dyeing. The exclusive Plastavon Sleeve allows more even dye distribution, better "flow" control and filters out objectionable or discoloring matter. Also reduces slippage in primary winding.

Standard sizes: 5/8" I.D. x 6¾" long and 1⅜" I.D. in varying lengths. Special sizes available. Can be furnished in certain colors for identification. Consult your Sonoco sales-engineer or write us direct.

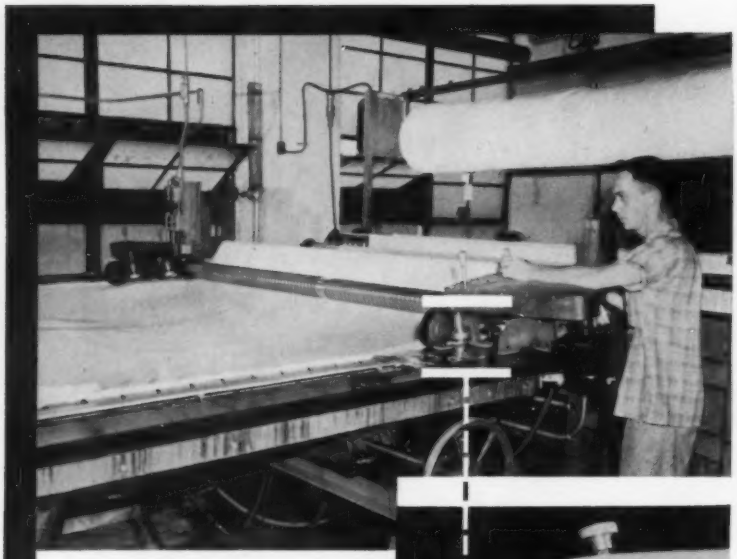
sonoco
SERVES THE WORLD
PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

MYSTIC, CONN. • AKRON, IND. • LOWELL, MASS. • PHILLIPSBURG, N. J.
LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

DEPENDABLE SOURCE OF SUPPLY



How KINGSBORO MILLS

increased production 100%
improved quality
reduced costs with three
ASKANIA
CLOTH GUIDE CONTROLS

Increased output from 20-40 yards per minute... a neater more even job than could ever be obtained by custom processing... the release of *one man per frame* for other, more productive work... drastically curtailed maintenance expense—all are the specific results made possible by three automatic ASKANIA Cloth Guide Controls applied to Kingsboro Mills tenter frames.

HOW IT WORKS

Accuracy and dependability are extremely important. ASKANIA'S twin-jet positioners automatically guide the pins or clips so that they engage the cloth just inside the selvage edge as it enters the tenter frame. ASKANIA'S Cloth Guide Control is non-contact. A *breath of air* is the only contact between the control and the web. It has proven to be the most accurate of all cloth guide controls.

WHERE IT'S USED

The Cloth Guide Control can be used in *any* mill, operating at *any* rate of speed and in the production of *any* type or thickness of material. If you SLIT, POSITION, WIND, TENTER OR EXAMINE, you can save time and earn money by using this 100% automatic watchdog in your mill. There are only three basic units involved in the control operation. The Sensing Nozzle, The Jet-Pipe Regulator and The Hydraulic Work Cylinder. *Your own equipment is the only limit to the amount of run-out which can be corrected.*

CONTINUOUS CONTROL
HIGH SPEED OPERATION
NON-CONTACT
HYDRAULIC OPERATION
MOST ACCURATE CONTROL
FOR ALL CLOTH HANDLING
WIDE RANGE

Send today for Bulletin No. 161 which explains the purpose, the function and operation of the ASKANIA CLOTH GUIDE CONTROL.

CONTROLS FOR INDUSTRY

ASKANIA REGULATOR COMPANY

260 East Ontario Street, Chicago, Illinois

HYDRAULIC, ELECTRONIC CONTROLS & SERVOS, GENERAL SYSTEMS, ENGINEERING & COMPUTER SERVICE, VALVE ACTUATORS & CYLINDERS

A Subsidiary of General Precision Equipment Corporation

Shorts and Remnants

know. We will try to find it.

► Now we want to close it this month by introducing a couple of nice guys who have joined TI's editorial staff:

Jess Ellington

Ben Hunter

TI's new associate editor in the Atlanta office, from where he will cover Georgia and Alabama, is **Jesse W. Ellington.** Before joining us, Jess was night superintendent of Piedmont Cotton Mills, East Point, Ga.

Jess attended The Berry Schools, and got his B.S. degree in Textiles at Georgia Tech. In addition to his experience at Piedmont, Jess has also worked for Aragon Mills and Exposition Cotton Mills.

Jess should have no trouble in getting his articles checked for grammatical accuracy—his wife is a high school English teacher at suburban Clarkston, Ga., where the Ellingtons live with their 10-year old son.

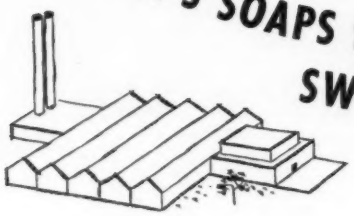
Benjamin F. Hunter, our new associate editor covering the New England and Middle Atlantic textile areas, comes to us from Hess, Goldsmith & Co., where for 14 months he was head of the production engineering department for the two Wilkes-Barre, Pa., mills.

Ben has a B.A. from Bates College, where he majored in Economics. After a 44-month interruption while we were all working for Uncle Sam, Ben joined Barnes Textile Associates, where he was employed for seven years as an engineer. He served Barnes' textile mill clients in cost and production engineering, and personnel training.

Ben has so far managed to remain single, and maintains his bachelor apartment in Wellesley Hills, Mass.

► So with that "we'll see you later —alligator. Not for a while—crocodile." Till next month, that is.

SWIFT'S SOAPS treat fine fabrics RIGHT . . . SWIFT'S service treats YOU right!



Every bag, drum, truckload, or carload of Swift's soaps reflect over 50 years of day to day experience in making soap for the textile industry. The know-how has made Swift & Company a leader in supplying soaps that treat fine fabrics right.

There is a soap for your needs and these are available from strategically located stocks throughout the country. Swift's service treats *you* right and you can be assured of courteous and speedy service. You can also be assured of the *right* product for your needs whether it be for dyeing, fulling, or scouring. Write for details and remember . . .

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

Here are but a few of the fine Swift & Company Soap products available:

VERTEX FLAKES
Low titer. Made from the highest grade red oil. The actual soap content is 94% and the titer range is 10-12° C. Vertex is highly soluble in low temperature operation.

T-25
Designed especially for the textile industry. Has an actual soap content of 92% and a titer range of 25-28° C. Ideal where a medium titer product is desirable.

SOLAR DETERGENTS
Granule, free flowing, an-ionic. Liquid, 100% active non-ionic. Ideally suited for use in textile operations.

WHITE RIBBON
Chips & Powder
A high titer product. Contains neutral soaps in the range from 41-42° C. Recommended where higher temperatures are employed. Chips have a soap content of 88%—powder, 92%.

S-20

SWIFT & COMPANY
SOAP DEPARTMENT
4115 Packers Ave. • Chicago 9, Illinois

Swift
101 ST YEAR

To Serve Your Industry Better

HYSTER INDUSTRIAL TRUCKS ARE *BUILT* TO DO THE HEAVY WORK

Rug pole equipped Spacesaver 40 loading out carpets. This unit will handle the heaviest rolls now being processed at this finishing mill.

Pictured above is one of many typical examples of how Hyster® Industrial Trucks are helping to effect tremendous savings in the cost of handling materials in the Textile Industry.

Even if you are now using lift trucks or have never used industrial trucks of any kind, your Hyster dealer can show you how you can quickly realize more profit from your operation with these multi-purpose utility tools. Your Hyster dealer knows materials handling . . . he is an expert on the problems and their solution. He can help you with special techniques and cost reducing methods. Call him today...why not take advantage of his materials handling know-how? He is listed under "Trucks-Industrial" in your telephone directory.

HYSTER DEALERS GIVE YOU ALL 3!

1 **PLANNING**—your Hyster Dealer will plan your materials handling operation from scratch, or will analyze your present system to see if it can be improved.

2 **THE RIGHT TRUCK** — for *your* job from Hyster's complete line of industrial trucks (1,000-30,000 lbs.) and over 100 job-attachments for economical load handling.

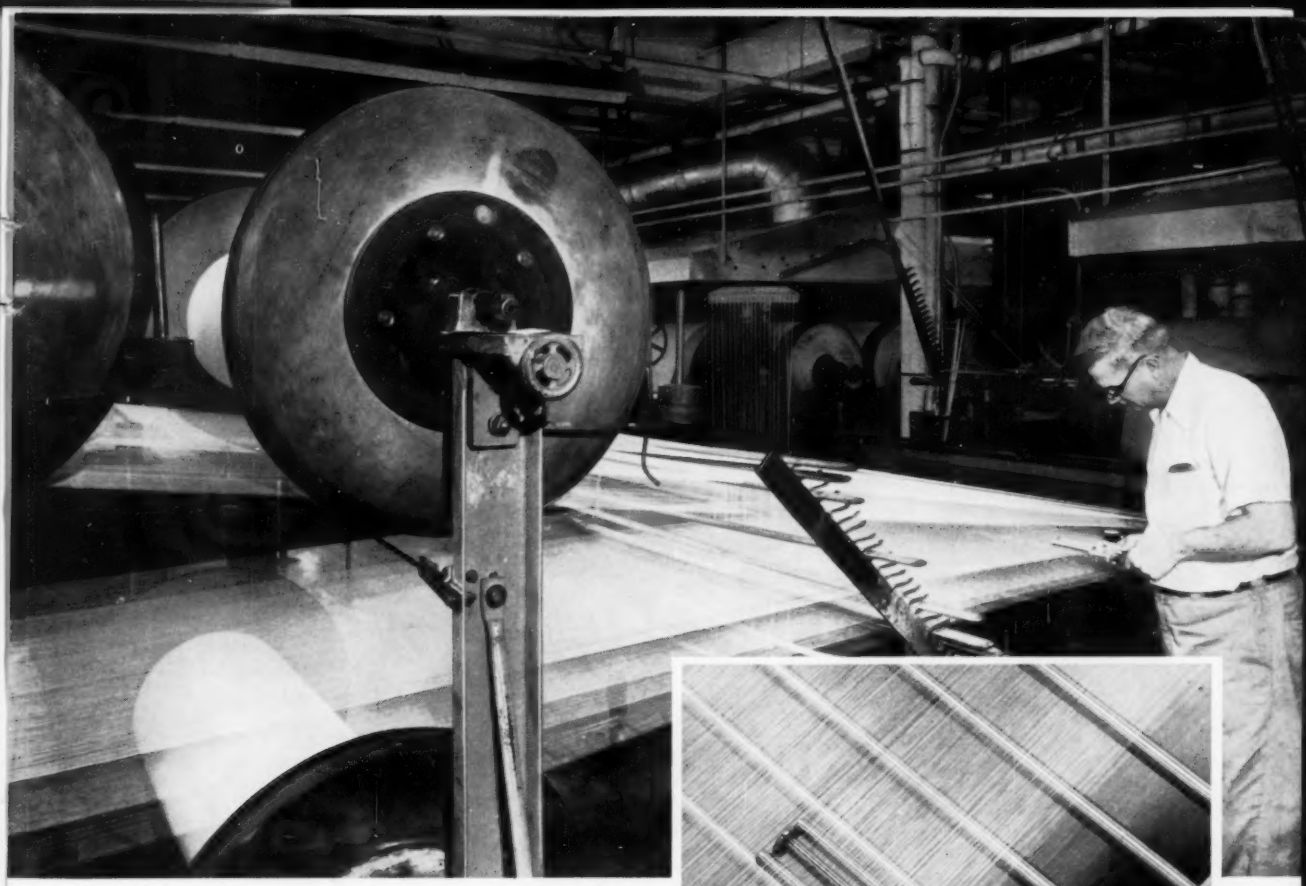
3 **THE RIGHT SERVICE** — ample spare parts stock, shop facilities, factory-trained mechanics and an efficient field service that keep your Hyster lift trucks going on your job, wherever your job might be located. Hyster trucks are noted the world over for their low downtime.

Materials Handling Trucks from 1,000 to 30,000 pound capacities

2902-57 N. E. CLACKAMAS, PORTLAND 8, OREGON
1010-57 MYERS STREET.....DANVILLE, ILLINOIS
HYSTER N.V. .....NIJMEGEN, THE NETHERLANDS
FOUR FACTORIES: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands.

HYSTER

HYSTER COMPANY



NEW KIDDE SLASHER TENSOMETER ends uneven yarn sheet tension in cotton system slashing

The new KIDDE Slasher Tensometer prevents a principal cause of streaky fabric in weaving mills that slash their yarn on the cotton system. No matter how many creel beams you use to make up your warp, you can now be sure that the tension in all yarn sheets is the same. With the KIDDE Slasher Tensometer it is easy to compare the tensions in the yarn sheets making up the sley and adjust the beam let-offs to even out any differences. It eliminates the all too fallible human element in estimating tensions from different beams in the same set.

Developed in cooperation with the Textile Research Laboratory of American Viscose Corporation, the KIDDE Slasher Tensometer will provide quality insurance in any slasher room. For prices and complete information, write today to: Dept. STB1.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

Stop hand oiling

start increasing production

with

BIJUR

AUTOMATIC

LUBRICATION

Hand lubrication of textile machinery is obsolete. Leading textile mills, following the trend toward greater automation, have switched to automatic lubrication.

Bijur Automatic Lubrication makes costly, laborious, hand oiling a thing of the past. It insures more production from every machine by doing away with the major cause of textile machinery breakdowns—faulty lubrication. And still more productive time is added by eliminating down-time for hand oiling. Every bearing, even the most inaccessible, is fed the right quantity of oil at the right time.

Savings in oil consumption can exceed 50%. Work spoilage is avoided. Danger of fire is reduced and causes of accidents are removed. When you eliminate outmoded methods of lubrication, you will see immediate results in dollars-and-cents. 1032

Colorful, new bulletin, "From Fibre to Fabric," shows the practical benefit that Bijur Automatic Lubrication offers to the Textile Industry. Write for your copy.

BIJUR

LUBRICATING CORPORATION

Rochelle Park, New Jersey

Pioneers in Automatic Lubrication

67

Personal NOTES

ABOUT MEN YOU KNOW

Samuel H. Boyer has been appointed foreman-plant facilities for the distribution transformer plant of the General Electric Co. in Hickory,

Mr. Boyer

N. C. Formerly a plant engineer at Wisteria Hosiery Mills, Gastonia, N. C., Mr. Boyer resides in Newton, N. C.

Newly elected officers of the Alabama Cotton Manufacturers Association are: chairman of the board, **Fred F. Phillips,** president and treasurer, Buck Creek Cotton Mills, Siluria; president, **R. C. Moyer,** manager, The Linen Thread Co., Blue Mountain; vice-president, **F. M. Lyon,** president, Opp-Micolas Cotton Mills, Opp; treasurer, **Erwin R. Lehmann,** vice-president in charge of industrial relations, West Point (Ga.) Mfg. Co.

CORRECTION: President H. Goldstein of American Velour Mills, Inc., Bound Brook, N. J., has advised that **Shorty Goldstein** is not manager of his mill. On page 24 of the May, 1956, issue of this magazine was an announcement that the latter Mr. Goldstein, formerly of Burlington (N.J.) Fabric Mills, Inc., is now manager of American Velour. The editors regret having published this erroneous information and hope that no one was inconvenienced by it.

Eastern Carolina Division of Southern Textile Association recently elected new officers as follows: chairman, **W. A. Rhinehart,** superintendent, cotton mill, Golden Belt Mfg. Co., Durham; vice-chairman, **J. C. Farmer,** superintendent, Henderson Cotton Mills, Inc.; secretary, **E. B. Grover,** N. C. State College, Raleigh, N. C.

Edward G. Bilodeau, formerly

(Continued on page 36)

from denims to dimities . . .

Clinton®

starches smooth production

Manufacturers of all kinds of fabrics know they can rely on Clinton starches. In warp sizing — in finishing — Clinton starches speed production, improve the appearance and body of fabrics, from heavy twills and denims to sheer summer-weights.

Consistently good results with Clinton starches are the result of Clinton's continuous laboratory control. In fact, many mills use Clinton starches as a standard of comparison.

Choose Clinton starches and you can be sure of uniform high quality fabrics from one bolt to the next — from one production run to another.

. . . *and remember* technical service in connection with your specific problems is available without obligation

Quality products

FROM THE WORLD'S CORN CENTER

CLINTON

CLINTON CORN PROCESSING COMPANY

A Division of Standard Brands Incorporated

CLINTON, IOWA

MILL TESTED AND PROVED

THE FIRST LINT-PROOF TEXTILE MOTOR

- ELIMINATES MOTOR CLEANING COSTS
- SAVES SPACE—PERMITS UNDER FRAME MOUNTING
- TOTALLY-ENCLOSED—PREVENTS WATER DAMAGE
- REDUCES FIRE HAZARD
- FLEXIBLE DESIGN—ADAPTABLE TO ALL MACHINES

Now available—1-20 hp. general-purpose, totally-enclosed, air-cooled, textile motor for application on spinning, roving (low torque), drawing and twisting frames, and on cards, openers, pickers and other textile machines. B-1004

RELIANCE Totally-Protected MOTORS

RELIANCE ELECTRIC AND ENGINEERING CO.

Cleveland 10, Ohio • Offices in Principal Cities

Canadian Division: Welland, Ontario

another addition to our line of light fast direct dyes

NATIONAL SOLANTINE® BLUE GREEN BFL

Here is a useful National non-dusting Direct Dye for cotton carpet yarns, upholstery fabrics, hosiery, suitings and the like in bright bluish-green shades.

National Solantine Blue Green BFL rates "excellent" in fastness to light, rubbing, alkalis, dry cleaning, water and sea water and has very good fastness to washing and perspiration. It discharges well with neutral and alkali pastes. In all, an excellent value.

Why not keep a sample at hand for the next match where this easy-to-use, always popular shade can be used. Just get in touch with our nearest branch for a sample, shade card (Bulletin #441) and quotation.

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST. NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco Portland, Ore. Greensboro Charlotte Richmond Atlanta Los Angeles Columbus, Ga. New Orleans Chattanooga Cleveland Toronto

Allied Chemical

MORTON SYSTEM MACHINES FOR DYEING AND BLEACHING

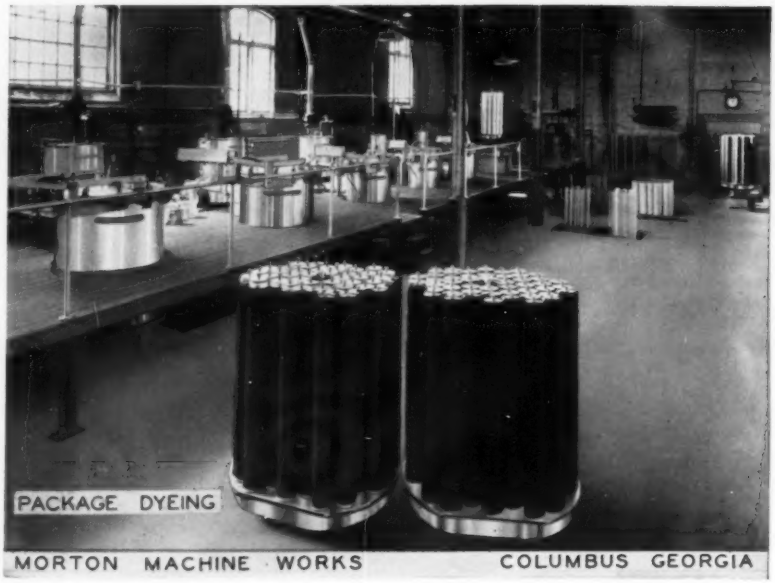
PACKAGES-
CHEESES, TOPS, RAW STOCK
ROVING - CONES - BEAMS

The Morton System Equipment allows the Dyer to process all types of packages and beams with a simple change of material carriers. Automatically controlled.

—SINGLE OR MULTIPLE KIERS—

To Dye any size lot of packaged yarn or any number of Beams MULTIPLE MACHINE may be operated as single units on separate colors—(Excellent for large lots)—Just right for small lots of all different colors.

"Machines built to fit your own Production and Specifications"



MORTON MACHINE WORKS COLUMBUS GEORGIA

ELEVATED TEMPERATURE PRESSURE DYEING

The Morton Machine Works pioneered in the development of machinery to dye stock and yarn at temperatures in the 300 degree range. These machines are excellent for use on synthetics.

- SAFE -

"Our products are designed and built to comply with the requirements of A. S. M. E. Code and we are authorized to apply the appropriate code symbols."

Manufactured by:

MORTON MACHINE WORKS, Inc.

COLUMBUS, GEORGIA, U. S. A.

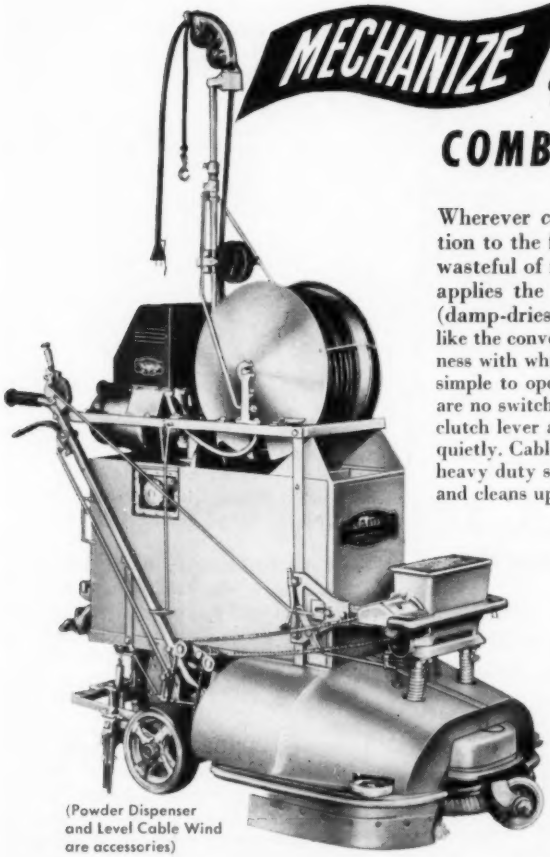
Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:

BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS

VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS.

Let's not clean away dollars and man-hours with costly, inadequate floor care

MECHANIZE *your floor-cleaning with a* COMBINATION SCRUBBER-VAC!



(Powder Dispenser and Level Cable Wind are accessories)

Wherever *combination-machine-scrubbing* is the practical solution to the floor-cleaning problem, any lesser, slower method is wasteful of money and manpower. A *Combination Scrubber-Vac* applies the cleanser, scrubs, flushes if required, and picks up (damp-dries the floor)—*all in one operation!* Maintenance men like the convenience of working with this single unit . . . the thoroughness with which it cleans . . . and the features that make the machine simple to operate. It's *self-propelled*, and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs quietly. Cable reel is self-winding. *Model 213P Scrubber-Vac* at left, for heavy duty scrubbing of large-area floors, has a 26-inch brush spread, and cleans up to 8,750 sq. ft. per hour!

Finnell makes *Scrubber-Vac Machines* in a full range of sizes—for small, vast, and intermediate operations. From this complete line, you can choose the size that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that you can lease or purchase a *Scrubber-Vac*, and that *a Finnell Floor Specialist and Engineer is nearby* to help train your maintenance operators in the proper use of the machine . . . to recommend cleaning schedules for most effectual care . . . and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1306 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

What Price Flyer Reconditioning ?

Ideal offers a wide range of Flyer Reconditioning prices, depending on the work to be done and the finish you select. In each range, Ideal prices compare most favorably with any others.

Ideal's full Flyer Reconditioning Service is in a class by itself, because it includes services not available elsewhere. In addition to rebuilding and machining all worn parts to factory specifications, it includes extras such as:

Heat Tempering for extra rigidity

Selecto-Speed Balancing* to run smoothly at your machine speeds

Your choice of 5 superb finishes, including the exclusive highly rust and tag resistant Ideal Finish**

Ideal can give you exactly what you want at a price you'll like. It can pay you to write or call us to make an appointment for an Ideal Sales Engineer. There is one near you.

*Patented
**Trade Name

See us at Booths 239 and 240, Southern Textile Exhibition.

Ideal Machine Shops, Inc., Bessemer City, N. C.

Continuous Service to Textile Mills Since 1925

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 30)

chief chemist, is now superintendent of dyeing, bleaching, and finishing at the Bates Division of Bates Mfg. Co., Lewiston, Maine. He replaces **Dexter R. Kneeland** who has retired because of ill health. **Adolph J. Patrick** is Mr. Bilodeau's assistant.

Westwood Textile Manufacturing Co., Southbridge, Mass., has placed **Paul Boehm,** formerly vice-president in charge of manufacturing at the Bell Company, in a supervisory position.

Appointment of **William P. Crawley** as supervising textile engineer to establish and operate a textile plant for the manufacture of Fiberfrax ceramic fiber in roving, yarn, rope, fabric, and tape forms, has been announced by The Carborundum Co., Niagara Falls, N. Y. Mr. Crawley, who was formerly with American Viscose Corp., will also serve in technical sales activities.

Mr. Crawley

John T. Cashion succeeded **William H. Bollin,** who retired as general manager of Washington Mills Co.'s Mayodan and Dobson, N. C., plants after 36 years with the company. Mr. Cashion had been Mr. Bollin's assistant.

James A. Chapman, president of Inman and Riverdale Mills, will be presented an honorary doctor of laws degree in June during the annual commencement exercises of his alma mater, Wofford College, in Spartanburg, S. C.

At the Woods Manufacturing Co., Ltd., Montreal, Que., Canada, **H. Roy Crabtree** has succeeded his father, the late Harold Crabtree, as president and board chairman. He also con-

50,000 Reasons Why

IT PAYS TO BUY A BUTTERWORTH MACHINE

Here's a two-million-dollar inventory of 50,000 *different* Butterworth parts. Actually, it's two million dollars' worth of insurance for you, aimed at uninterrupted, long-life service for every Butterworth machine you buy.

Butterworth parts — all 50,000 of them — are as near to you as your telephone . . . as handy as your freight office. They range from a special diaphragm costing 5¢ to a complete bearing assembly priced at $5,000. Most of them are parts that can be bought singly only at Butterworth. That's because hard-to-get parts are Butterworth's stock in trade. In 19 out of 20 emergencies, the item you need will be on its way to you less than 24 hours after we get your order. If yours is the 1-in-20 problem that needs an unstocked part, we'll tell you so at once . . . then work at top speed to meet your need.

When you standardize on Butterworth machines, you add our Parts Department to your plant. That's worth more than a million dollars — in parts.

Some of the 50,000 "Reasons"

Dryer Bearings, Pumps and Controls
Gears for Tenters, Calenders and Embossers
Flexible Tubing for Dryers
Bearing Assemblies for Compartment Washers
Guider Parts
Siphon Parts for Dryers
Tenter Drives
Air Cylinders
Special Diaphragms
and approximately 49,987 other "reasons"

H. W. BUTTERWORTH & SONS CO.
Bethayres, Pennsylvania
1211 Johnston Bldg., Charlotte, N. C. • 187 Westminster St., Providence, R. I.
Representatives in Principal Cities of the World
Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing, Embossing, Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

BUTTERWORTH
Serving the Textile Industry Since 1820

this "Buffalo" pump moves your acids on rubber

"Buffalo" Rubber-Lined Pump with upper half of casing removed.

—REDUCING COSTLY DOWN-TIME

—ELIMINATING EXCESSIVE REPLACEMENTS

If you are pumping highly corrosive liquids, or liquids containing abrasive solids, you may be paying the high price of short pump life. However, where such severe service destroys ordinary pumps in a hurry, "Buffalo" has the answer: *what acids can't touch, they can't hurt.* And in this "Buffalo" Pump, the liquid contacts nothing but rubber, vulcanized to the impeller and passages.

Pump life is multiplied many times and the cost of rubber lining is negligible when compared to the savings in down-time and replacements. Have us mail you Bulletin 982 — see this and the other "Q" Factor* features that save you money and troubles when you specify "Buffalo" Chemical Pumps.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

"Buffalo" PUMPS

BUFFALO PUMPS

DIVISION OF BUFFALO FORGE CO.

175 Mortimer Street Buffalo, N. Y.

Canada Pumps, Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

Personal NOTES ABOUT MEN YOU KNOW

tinues to serve as general manager.

William B. Chambley, Jr., formerly spinning superintendent at John P. King Mfg. Co., Augusta, Ga., is now foreman of carding and spinning at Fieldcrest Mills' Towel Mill in Spray, N. C.

W. Harold Deplitch has resigned as director of the cost and control department of Bates Mfg. Co., Lewiston, Maine.

M. J. Dick, office manager and a director of the Opp and Micolas Mills, Opp, Ala., was recently named assistant secretary of the mills.

A gift of $1,000,000, to be used toward the construction of a 750,000-volume library, was recently made to

Mr. Goldfarb

Brandeis University by **Jack A. Goldfarb,** president and chairman of the board of Union Underwear Co., Inc., New York, N. Y.

On the occasion of the spring meeting of the Alabama Textile Operating Executives **William F. Dolan** received the 1955-56 Phi Psi award which is presented annually to an outstanding senior majoring in textile technology at the Alabama Polytechnic Institute. He is now undergoing a course of training with the Nopco Chemical Co. preparatory to becoming a sales representative for the textile chemicals division.

Avondale Mills, Sylacauga, Ala., announces the resignation, due to ill health, of **Ted Ungar,** head of the designing department. **Dianne Bostick** and **Betty Crow,** assistants of Mr. Ungar, have assumed his duties.

Clarence Waugh has been trans-

TENSION:

How to control it on
ABBOTT QUILL WINDERS

With the development of an improved compensator mounting bracket for Abbott pin-board type Quill Winders, Walter Kidde & Company, Inc., now offers textile mill owners a new high in dependable, efficient yarn tension control.

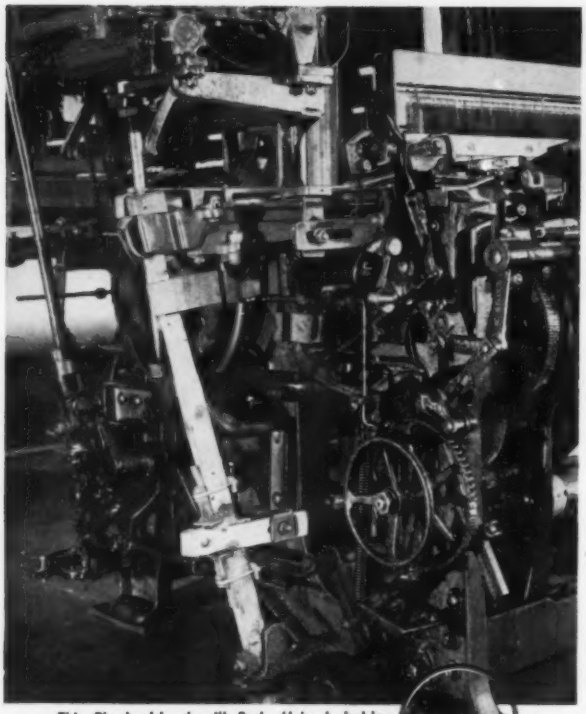
Used in conjunction with famous Kidde Double Disc Compensators, which are now available for spun yarns as well as continuous filaments, the new Kidde mounting arrangement (illustrated on the left) affords zero tension at the doffing station, preventing jamming of the full quills. Zero tension is also supplied during the first few wraps of the bunch, keeping "missing" to a minimum.

Practically every "quality conscious" weaving mill in the United States and many abroad have proven through constant use that Kidde Double Disc Compensators mean fewer faulty quills, more uniformly controlled fabric width, closer yardage differences from quill to quill and an actual cost saving in reduced loom down time and yarn waste.

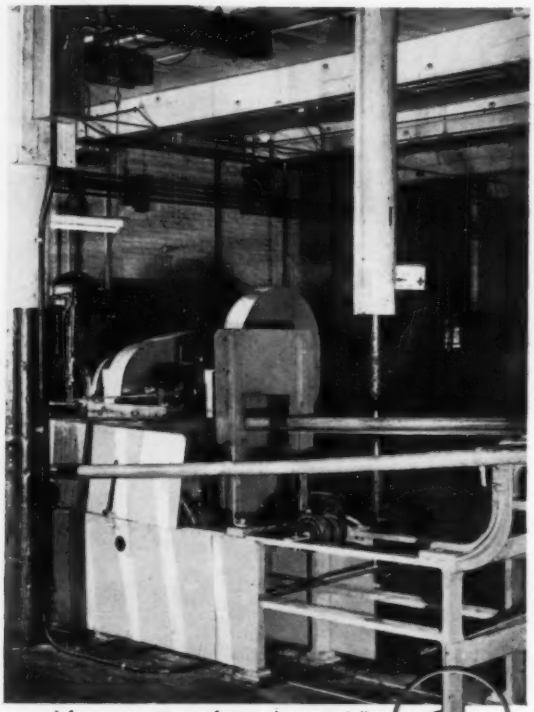
You, too, can use Kidde compensators to help you turn out better products at less cost. For more information, write Kidde today.

Kidde

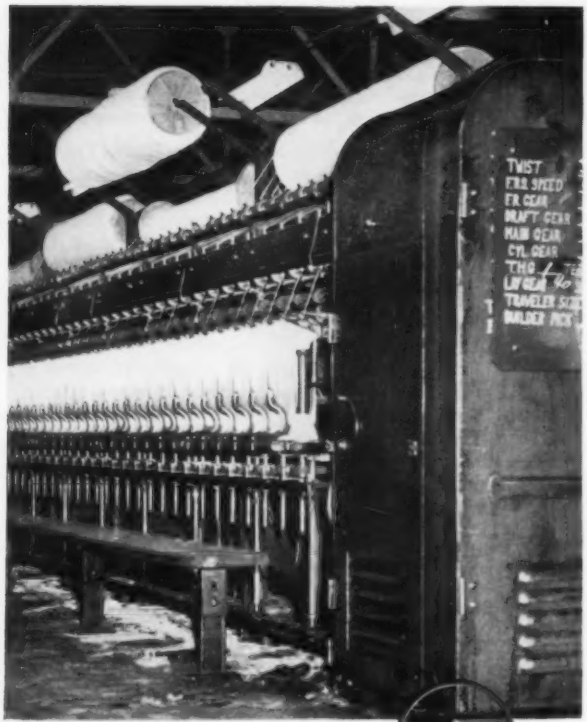
Walter Kidde & Company, Inc.
690 Main St., Belleville 9, N. J.



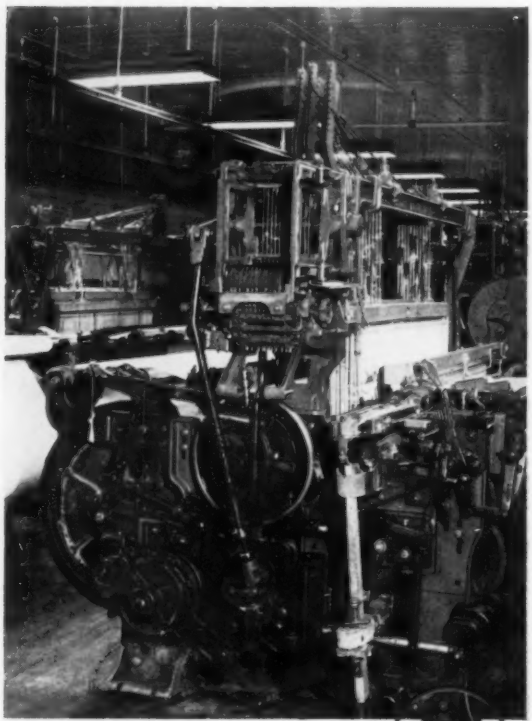
This Rhode Island mill finds *Unisorb* holds looms to concrete *without* lag screws. Vibration and shock have also been tremendously reduced by using the *right* type of *Unisorb*.



A famous carpet manufacturer has materially reduced transmitted vibration in their weave room by using *Unisorb* under 16/4 and 12/4 carpet looms.

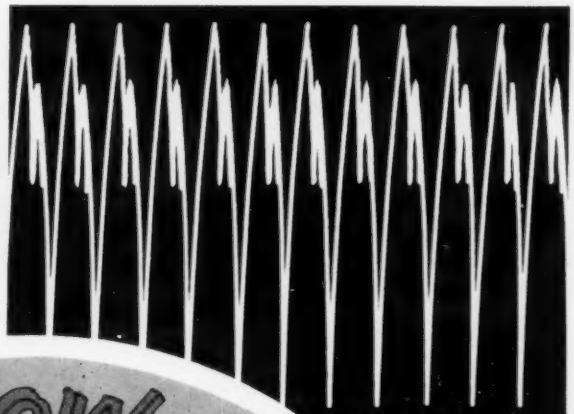


A North Adams woolen mill uses *Unisorb* under Burr Pickers, Pickers, Cards, Spinning Frames and other C & K woolen looms — helping materially to reduce vibration factor.



Draper looms and Barber-Coleman High Speed Warpers are anchored on wood floors with *Unisorb*, without bolts or lag screws. Vibration and noise have been reduced.

No bolts or lag screws needed to anchor 120 C & K W-3 woolen looms.



MACHINES WITHOUT UNISORB

NOW

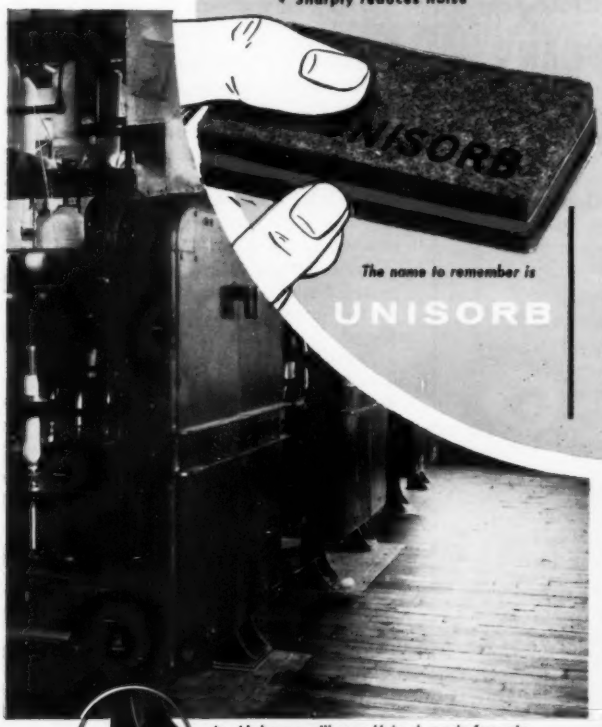
A Special Type of UNISORB for every Textile Machine

Exclusive red center cushion-control available in loading ranges from 5 to 250 lbs. PSI.

Four types of Unisorb have been developed to speed the installation and drastically cut the vibration of all your textile machinery.

This is how Unisorb works for you . . .

- **Saves up to 60% on installation time**
- **Cuts installation costs up to 30%**
- **Stops up to 85% transmitted vibration — increases machine life and operator efficiency**
- **Eliminates all bolts and lag screws, no drilling or patching. Easy to relocate machinery**
- **Sharply reduces noise**



The name to remember is

UNISORB

Be sure you get just the right type, density and firmness for vibration-free anchoring — specify Unisorb. For over twenty years, textile men have been using this mount to make their plants a better place to work and more profitable to run. Take advantage of this cost saving the next time you install or move a machine.

Send for "Facts about anchoring your textile machines" . . . for a pay-off in your plant.

the **FELTERS** company
235 SOUTH STREET, BOSTON 11, MASS.
Manufacturers of Felt and Felt Products

Offices: New York, Philadelphia, Chicago, Detroit, St. Louis
Sales Representative: San Francisco
Mills: Johnson City, New York; Millbury, Mass.; Jackson, Mich.
Distributed by:
INDUSTRIAL SUPPLY CO., Clinton, So. Carolina
TEXTILE SUPPLY CO., Dallas, Texas
Representatives in principal cities throughout the world

An Alabama mill uses *Unisorb* pads for spinning frames, warpers, looms and other machines, finding it a simple, efficient and economical method of installation.

MACHINES WITH UNISORB

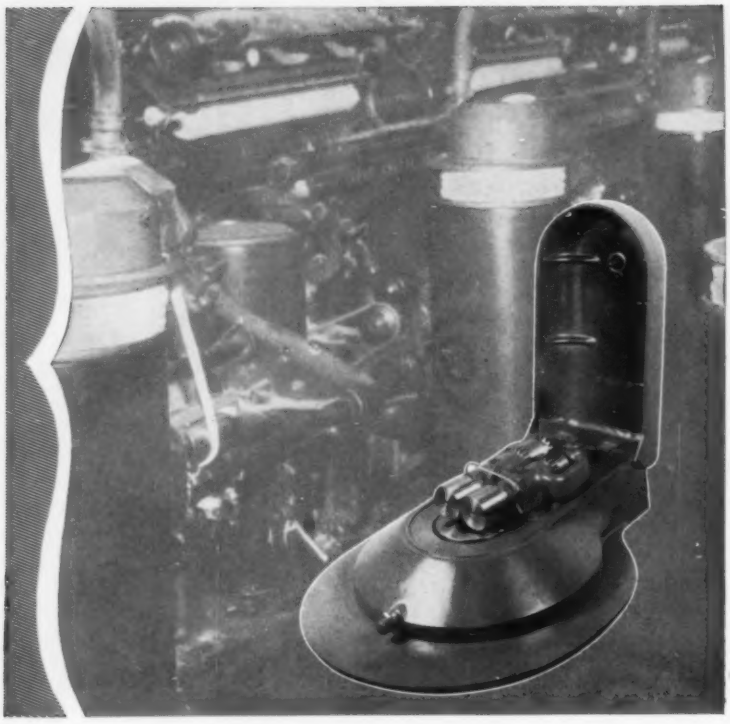
Please send me a copy of FACTS ABOUT ANCHORING YOUR MACHINES WITH UNISORB, at no obligation to me.

Name.....Title.....
(Please print)

Company.....

Address.....

City.....Zone.....State.....



SOUTHERN STATES COILER HEADS MAKE CONVERSION TO LARGER CANS A SELF-PAYING PROPOSITION

Every mill man with an eye for ways to cut card room operating costs knows the advantages of larger cans. But what some don't realize is that Southern States conversions are so economical that they pay for themselves—a fact proved by case histories of mills throughout the country.

The Southern States Universal Coiler Head, illustrated above, is designed for either 14- or 15-inch cans. It is adaptable to any make of coiler. Using this head, intermediate gearing, coiler base and *your existing stand*, an inexpensive installation can be made in your mill.

Then you can enjoy all of these advantages: simplified oiling; ease of maintenance; smaller parts inventory; more efficient handling; lower operating costs; and improved quality. The photograph shows the simplified design of this head. Notice the streamlined cover and bonnet. Cut tooth gears and oilite bearings are used throughout. It is precision built for years of satisfactory service.

Get full facts from your Southern States representative, or send your request direct to the home office for a quick reply.

SS®

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Personal NOTES ABOUT MEN YOU KNOW

ferred from Amerotron Corporation's Boston office, as waste and noils buyer, to the Barnwell, S. C., plant where he will purchase by-products and wool for Amerotron's Barnwell and Tifton, Ga., plants.

Willard W. McLeod, vice-president for research, Coats & Clark, Inc., served as an associate chairman of a

Mr. McLeod

recent American Managament Association workshop seminar which dealt with managing research and development.

At the Ware Shoals, S. C., division of Riegel Textile Corp., **William E. Ashley** has been promoted to assistant superintendent, replacing **W. P. Johnson** who retired. **Ernest Greer** is assistant night superintendent and **Herman B. Medlock** is now overseer of weaving, filling the vacancy created by elevation of Mr. Medlock.

Graves (Spud) Gore has been promoted from overseer of maintenance of the dyeing and finishing plant, Riegel Textile Corp., Trion, Ga., to a position with the newly organized mechanical development group for all the textile divisions of Riegel. **Bunyan Greene**, formerly head mechanic of the central garage, is in the dyeing and finishing plant filling the position vacated by Mr. Gore. * * * **Robert Allen** was promoted from assistant overseer to overseer of the carding department at Trion following the recent retirement of **L. B. Colbert, Sr.**, after 48 years with the company and its predecessors. Mr. Colbert, who was overseer of carding for about 38 years, was honored by card room employees at a barbecued chicken supper.

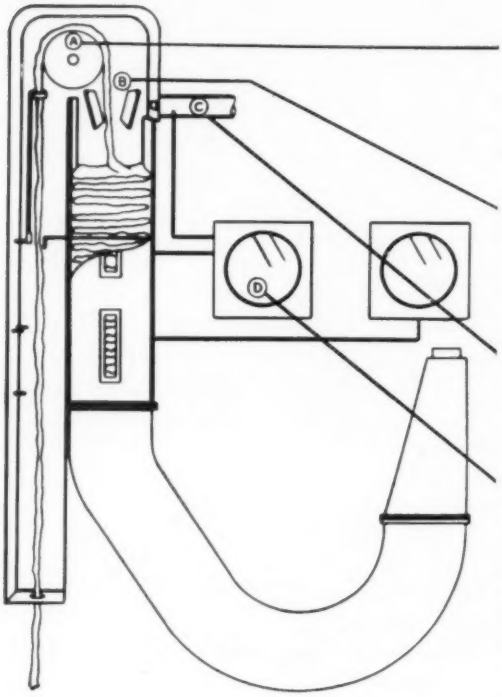
E. E. Hance has been promoted from overseer of dyeing at Excelsior

Improve bleaching quality... lower costs with the new, simplified Du Pont J-Box

Designed with fewer moving parts, Du Pont's new, simplified J-Box sets an unequaled standard of operating efficiency. Whether it is used in new continuous peroxide bleaching systems or to modernize present installations—it improves quality by reducing cloth distortion and abrasion to a minimum. And it pays off by saving you as much as 10% on construction and operating costs.

To get all the facts, call your nearest Du Pont technical representative. He will be glad to give you complete information on how you can improve bleaching quality with the new J-Box.

New J-Box offers these improved design features:



A. NEW DRAW-ROLL ASSEMBLY. Now cloth is gently lifted into storage chamber by a single draw roll. Rope systems use a simple traverse pot eye and plaiter to pile the cloth evenly in the J-Box.

B. NEW HEAT CHAMBER increases available steam volume 16-fold for far more efficient cloth heating before piling in J-Box. The result is minimum steam consumption with maximum heat.

C. NEW STEAM DISTRIBUTOR accurately regulates the amount of low-velocity conditioned steam introduced into J-Box. Cotton fabrics of all weights and weaves are thus uniformly heated.

D. NEW STEAM CONTROL. Steam flow is determined by the requirements of the fabric . . . so that the proper amount of steam is present no matter what type fabric is processed. The control, recording and measuring instruments required are available from most instrument manufacturers.

Du Pont does not build or sell bleaching equipment. These new J-Boxes may be obtained from a number of leading equipment manufacturers.

IN CHARLOTTE
Call J. L. Moore
FRanklin 5-5561

IN BOSTON
Call M. H. Rowe
HAncock 6-1714

IN NEW YORK
Call R. A. Secord
LOngacre 3-6440

IN PHILADELPHIA
Call G. A. Lunger
Kingsley 5-1900

Call

these Du Pont textile specialists. They can give you expert help with any immediate bleaching problem. No obligation.

E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Delaware

DU PONT PEROXIDES

ALBONE® hydrogen peroxide, 35% and 50%

PERDOX® sodium borate perhydrate

SOLOZONE® sodium peroxide

Sodium perborate tetrahydrate

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

INDIGOSOL*
FACT SHEET:

ORANGE I8RA

1 PROPERTIES AND FASTNESS TABLES

LIGHT 7
WASHING 4-5
CHLORINE 5

2 APPLICATION

Printing, padding and two bath dyeing of cotton and rayon with conventional methods. The color in this advertisement represents a padding of approximately 1% on cotton broadcloth.

3 ADVANTAGES

The fastest of the yellow oranges easily reserved and of good money value at its new lower price. Easily oxidized and with good solubility.

*Reg. U.S. Pat. Off.

Our application laboratories are daily solving new, difficult color-matching problems. Years of experience and research have equipped us to furnish the exact color you require . . . exactly — with speed, efficiency, economy. Write today for full information.

Carbic-Moss CORPORATION

451 WASHINGTON STREET • NEW YORK 13, N. Y.

SELLING AGENTS

Importer of the manufactures of Durand & Huguenin S. A. Basle, Switzerland

Pfister · PHARMA · DYESTUFFS PRODUCTS CORPORATION · OTTO B. MAY, INC.

CHARLOTTE • PROVIDENCE • PHILADELPHIA • COLUMBUS • LOS ANGELES • HAMILTON, ONTARIO

From Sliver to Yarn in One Operation...
with the NEW

WHITIN MONARCH* SPINNING FRAME

Produces large yarn packages and completely eliminates roving

Actual mill installation of Whitin Monarch Spinning Frames

COARSE YARN PRODUCTION

The Whitin Monarch Spinning frame is a new type machine for producing very large packages of knotless coarse yarns, from .5's — 8's (cotton count), directly from sliver. The frame features a massive chassis, the famous Whitin two-apron roving drafting arrangement with top arm suspension and weighting, 7″ gauge, up to 5½″ rings, 11″traverse. Either floor or ceiling creels can be used.

It is ideally suited to highly economical production of quality tufted carpet and other coarse yarns from wools, synthetics and blends with fiber lengths from 3″ to 9″.

- **Yarn on bobbin — up to 3.5+ lbs.**
- **Draft range 4 — 50**
- **Accommodates sliver up to 100+gr./yd.**
- **Spindle speeds up to 5000+ r.p.m.**
- **Spinning type cradles**
- **Quik-Set Ratching for instantaneous change of roll setting**
- **Pulleys for four spindle drive**

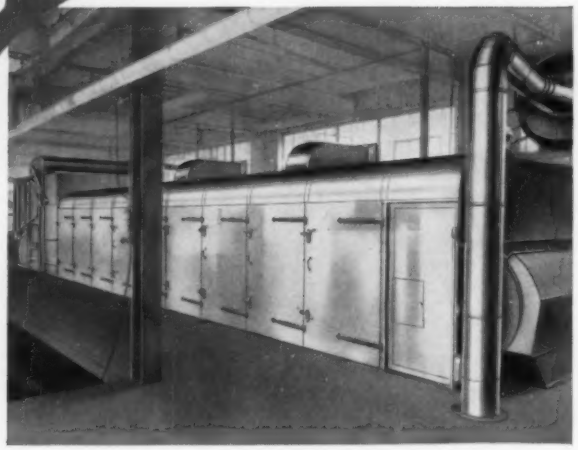
* TRADE MARK

WHITIN MACHINE WORKS — FOR 125 YEARS — SERVICE TO THE TEXTILE INDUSTRY — 1831–1956

Whitin
MACHINE WORKS
WHITINSVILLE • MASS.

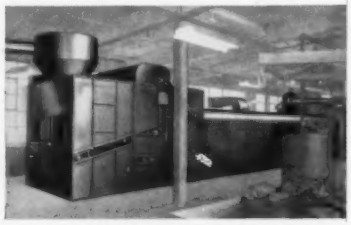
CHARLOTTE, N. C. • ATLANTA, GA.
SPARTANBURG, S. C. • DEXTER, ME.

HOW TO COUNT YOUR PROFITS



Full height hinged panels for economy in cleaning and maintenance

and here's how much



Completely automatic operation through feed, squeeze rolls and dryer

Increase production 33%—Decrease labor cost more than 33%

Figures comparing one year's operation of new SARGENT DRYING EQUIPMENT with older machines, show considerable savings in dollars and cents, *plus* better quality work.

HERE ARE THE FIGURES:

	Older Equipment	*New SARGENT Equipment*
Machines:	1 conventional feed 2 centrifugal extractors 1 8-section dryer	1 rotary-type feeder 1 pneumatic squeeze roll 1 8-section dryer
Operated:	7 days a week 3 shifts a day	5 days a week 2 shifts a day
Production:	350 lbs per hour	1,000 *up*, lbs per hour

And more uniform drying, day in, day out, with the new SARGENT machines. Whether you work with cotton or wool or synthetic fibres,

How much per pound savings would this mean to your mill?

C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA 19 — F. E. Wasson, 519 Murdock Road
CINCINNATI 15 — A. L. Merrifield, 730 Brooks Avenue
CHARLOTTE, N. C. — W. S. Anderson, Carolina Specialty Co.
ATLANTA, GA. — J. R. Angel, Mortgage Guarantee Building
E. TORONTO, CAN. — Hugh Williams, 27 Wellington St.

Personal NOTES ABOUT MEN YOU KNOW

Mills, Pendleton, S. C., finishing plant to superintendent of dyeing and finishing at the Union plant. He is succeeded at Pendleton by **Jerome Wilson.** Other personnel changes at Pendleton are: **Add B. Carwile, Jr.,** is now personnel manager at Pendleton, succeeding Joe O'Shields who resigned; **Archie Mathis** is now assistant overseer of final inspection department, having been transferred from the cloth room; and new assistant overseer of wet finishing department is **Franklin Staples.**

The Chamber of Commerce of Rome, Ga., and Floyd County named **R. Donald Harvey,** retired general manager of the Lindale division of Pepperell Mfg. Co., "Man of the Year in Floyd County" for 1955.

At the 56th annual convention of the Cotton Manufacturers Association of Georgia in Nassau, officers elected were as follows: president, **Henry McD. Tichenor,** president of the Walton Cotton Mill Co., Monroe; vice-president, **George H. Hightower,** vice-president of Thomaston Mills, Inc.; treasurer, **W. C. Vereen, Jr.,** president of Moultrie Cotton Mills. **T. M. Forbes** and **Frank L. Carter** of Atlanta were re-elected executive vice-president and secretary, respectively, and **Paul P. Watkins** was re-named traffic manager.

Mr. Tichenor

Harvey W. Moore, president and treasurer of Brown Mfg. Co. and Roberta Mfg. Co., Concord, N. C., is now a member of the board of directors of Cannon Mills Co., Kannapolis, N. C. Mr. Moore succeeds the late A. Luther Brown.

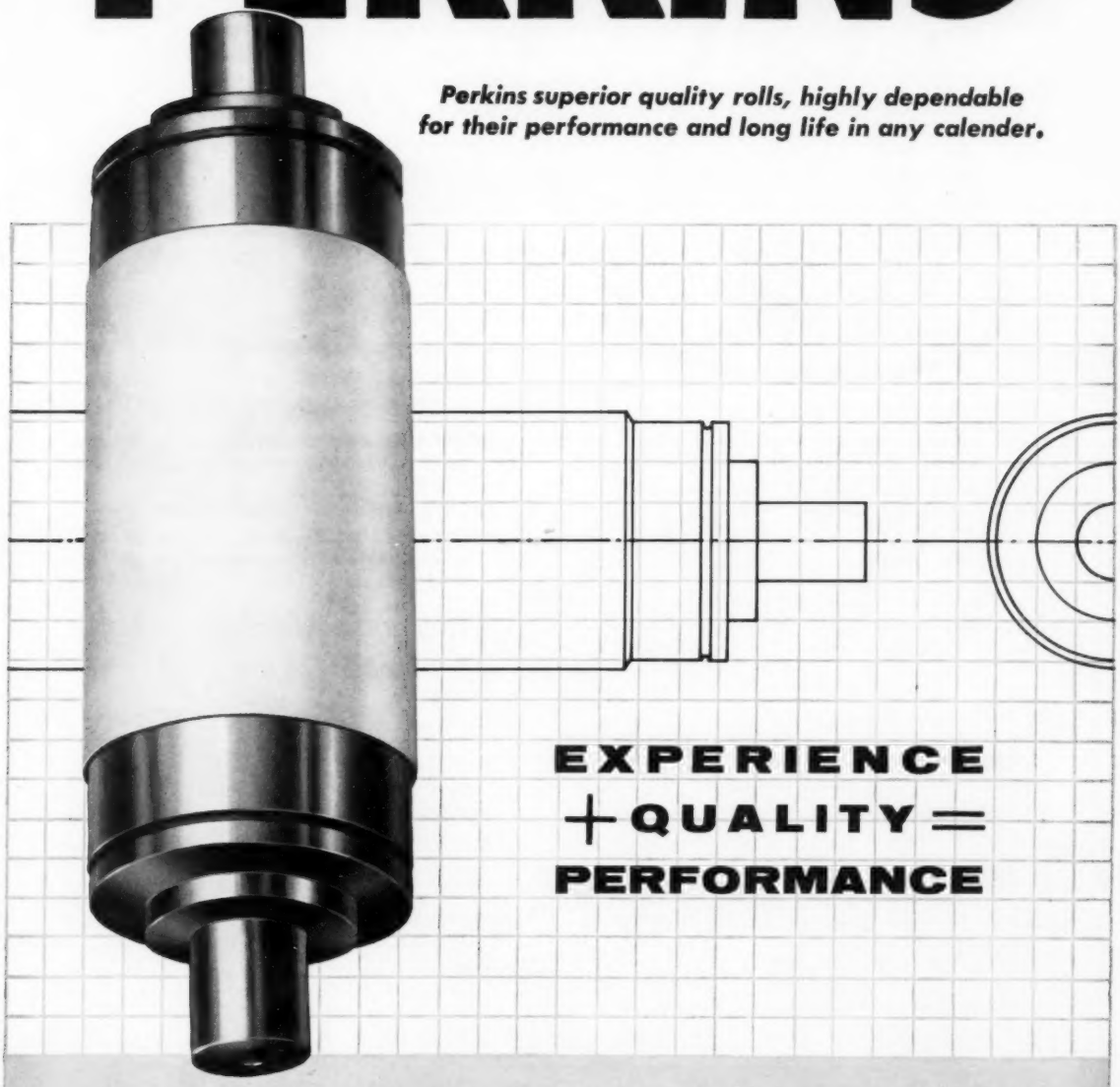
T. B. Nilsen, Clinton (Mich.) Woolen Manufacturing Co., was elected

(Continued on page 256)

ENGINEERED AND BUILT BY

PERKINS

Perkins superior quality rolls, highly dependable for their performance and long life in any calender.



EXPERIENCE
+QUALITY=
PERFORMANCE

B. F. PERKINS & SON, INC.

HOLYOKE · MASSACHUSETTS

SOUTHERN SALES OFFICE · 1609 LIBERTY LIFE BLDG · CHARLOTTE · NORTH CAROLINA

LARGEST MANUFACTURERS OF CALENDER ROLLS IN THE WORLD

SOLVAY CHEMICALS FOR WOOL PROCESSING

SODA ASH

SCOURING—Removing grease, oil and dirt from raw wool.

WASHING—Removing spinning and weaving oils and dirt from yarn and cloth.

FULLING—Building soap for lubrication of fibers to promote shrinkage.

SODIUM BICARBONATE

REDUCING pH—Reducing pH of solutions of soda ash and alkalies during scouring and washing.

CAUSTIC SODA

CONVERTING—Converting excess sodium bicarbonate (formed by carbon dioxide absorption during scouring) to sodium carbonate.

SOAPING—Preparing soap for scouring and fulling.

SHRINKPROOFING—Preparing sodium hypochlorite for shrinkproofing.

SNOWFLAKE® CRYSTALS
(SESQUICARBONATE OF SODA)

SCOURING—Washing of yarn and cloth; building of soap for fulling.

CHLORINE

SHRINKPROOFING—Preparing sodium hypochlorite for shrinkproofing.

HYDROGEN PEROXIDE

BLEACHING—Reducing colored impurities to colorless forms by white scouring following alkali-soap scouring.

FULLING—Assisting alkali-soap lubricant.

SHRINKPROOFING—Dissolving epithelial cell hooks on wool fibers to allow slippage and minimize shrinkage.

ORTHODICHLOROBENZENE

DE-PAINTING—Removing paint and tar from raw wool.

ODOR CONTROL—Minimizing objectionable odors of wool scouring waste.

METHYLENE CHLORIDE

DE-PAINTING—Removing paint and tar from raw wool.

CALCIUM CHLORIDE

WASTE TREATMENT—Causing separation of wool grease and dirt from waste scouring liquor.

SHRINKPROOFING—Reducing rate of oxidization of wool, and buffering pH in Stevenson & Wolsey (S-W) Process to minimize degradation of the wool.

AMERICA'S FIRST PRODUCER OF ALKALIES — SOLVAY® — 75th YEAR 1881-1956

SOLVAY PROCESS DIVISION
ALLIED CHEMICAL & DYE CORPORATION
Allied Chemical
61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES:
Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Houston
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

For **smoother** knitting and **fewer** seconds use GULFTEX, the non-staining needle oil

Gulftex oil keeps needles clean and smooth, resists gumming and minimizes the build-up of deposits on needles. Result: Smoothest knitting and fewer seconds!

Gulftex also has superior non-staining characteristics that make it a valuable lubricant for any application where the staining of fabrics is a problem. It is easily applied with spray, brush or plastic squeeze bottle.

Scores of hosiery mills report excellent results with this outstanding needle oil. Let us prove that it can do a better job in your mill!

Consult the yellow pages of your telephone directory to contact your nearest Gulf office, and have a Gulf Sales Engineer call.

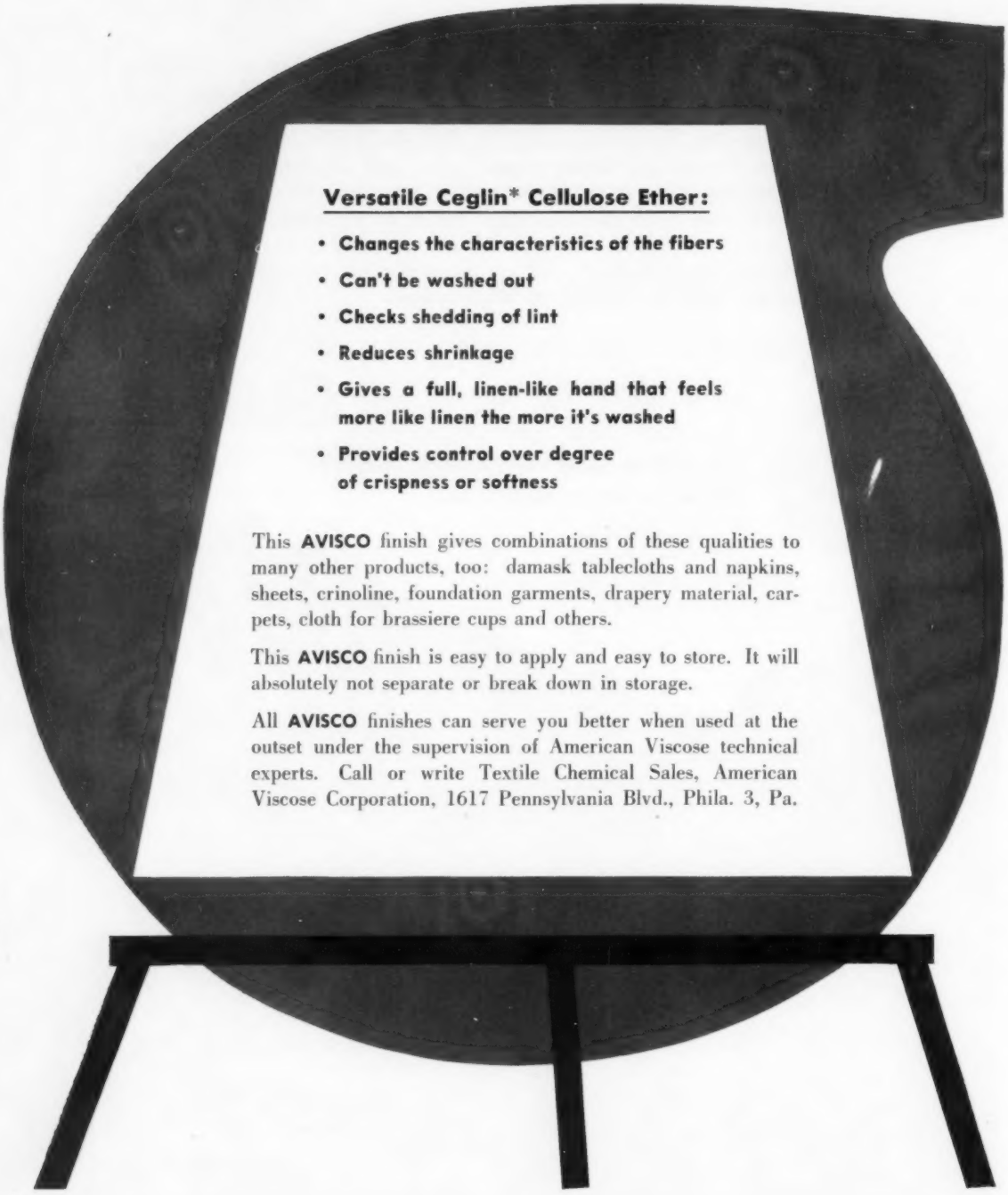
THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS

GULF

Gulf Oil Corporation • Gulf Refining Company

1822 GULF BUILDING, PITTSBURGH 30, PA.

AVISCO* finishes add



Versatile Ceglin* Cellulose Ether:

- **Changes the characteristics of the fibers**
- **Can't be washed out**
- **Checks shedding of lint**
- **Reduces shrinkage**
- **Gives a full, linen-like hand that feels more like linen the more it's washed**
- **Provides control over degree of crispness or softness**

This **AVISCO** finish gives combinations of these qualities to many other products, too: damask tablecloths and napkins, sheets, crinoline, foundation garments, drapery material, carpets, cloth for brassiere cups and others.

This **AVISCO** finish is easy to apply and easy to store. It will absolutely not separate or break down in storage.

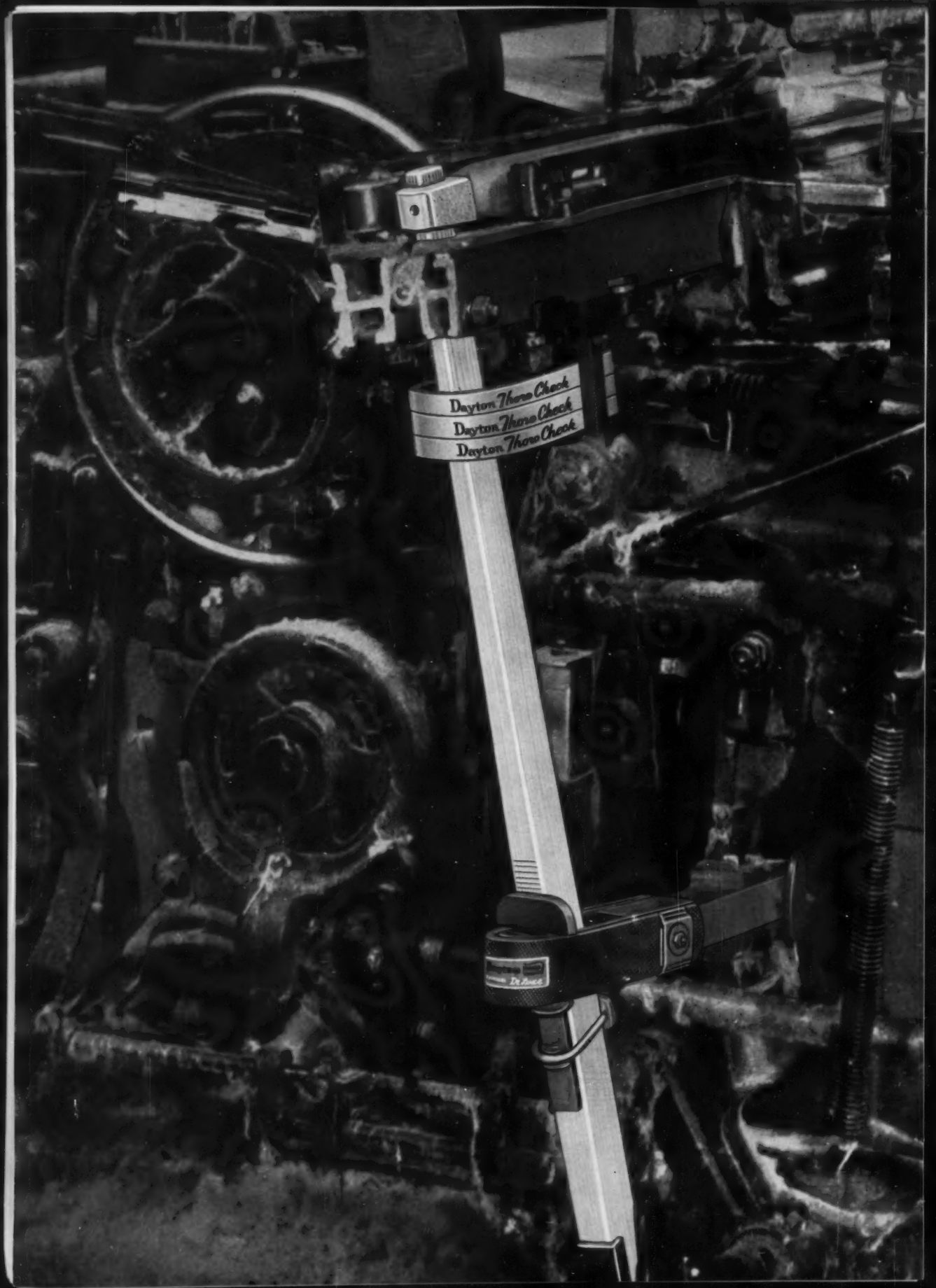
All **AVISCO** finishes can serve you better when used at the outset under the supervision of American Viscose technical experts. Call or write Textile Chemical Sales, American Viscose Corporation, 1617 Pennsylvania Blvd., Phila. 3, Pa.

GROW WITH AVISCO*

sales appeal to cotton textiles

*Avisco and Ceglin are trademarks of the American Viscose Corporation

TEXTILE CHEMICALS


Dayton Thane Check
Dayton Thane Check
Dayton Thane Check

Get double and triple service life at all 3 points of shock . . .

with this Dayton Picking Combination

In actual mill tests operating 'round the clock, five days a week, Dayton Thorobred Loop Pickers, ThoroCheck Endless Check Straps and Thorobred Deluxe Lug Straps lasted 2 to 3 times longer than other products doing the same job.

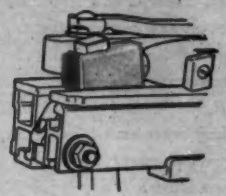
Dayton Thorobred Loop Pickers give double service, cushion millions of shuttle contacts without wear. Tilted construction assures perfect shuttle contact with less strain on the picker. Their flared bottom and tapered picker hole assures accurate seating without tearing the loop ply.

Dayton Endless ThoroCheck Straps in tests on X-2 looms functioned 24 hours a day, five days a week for 9 months without showing any visible signs of wear or needing adjustment. Other straps lasted only 2-3 months. Revolutionary design gives graduated checking action—eliminates drag over stick. Never affected by temperature or humidity, Daytons assure fast Monday morning starts. Patented construction and design fully eliminate permanent elongation.

Dayton Thorobred Deluxe Lug Straps, in mill tests, lasted twice as long as other lug straps. Their one-piece construction eliminates weak connector links. The molded-in plug absorbs the terrific shock, protects expensive loom parts. Super-strength cords in line with thrust direction give greater durability, longer life. Also free of permanent elongation.

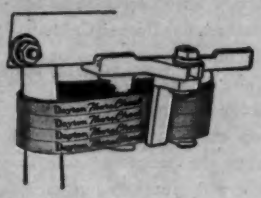
Reduce maintenance and downtime costs with the double and triple service life of Dayton loop pickers, check straps and lug straps. Call your Dayton Representative or write Dayton Rubber Co., Textile Div., 401 S. Carolina National Bank Building, Greenville, S. C.

Dayton Thorobred Loop Picker



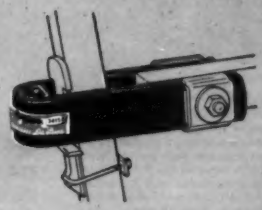
New Design! Narrow back eliminates wear on lay end strap.

Dayton ThoroCheck Straps



Extra economy! Can be replaced singly or in sets.

Dayton Thorobred Deluxe Lug Straps



One-piece construction! No rivets or other parts to work loose.

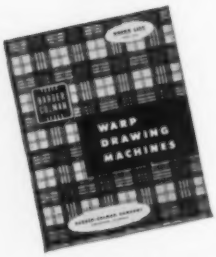
© D. R. 1956

Dayton Rubber 51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile Products for better Spinning and Weaving.

OPERATOR, AT LEFT, IS WATCHING MACHINE DRAW-IN COTTON WARP FROM A FLAT SHEET. HELPER, AT RIGHT, IS UNLOADING DRAWN-IN WARP FROM AUXILIARY TRUCK

A MACHINE WITH SHARP EYES, QUICK HANDS, AND AN AUTOMATIC "BRAIN"...



If you want to see the complete list of mills now using these machines, and the types of products they weave, write for a copy of the "Users List" shown above. Ask for *Bulletin F 6354*. It is available also in French and German translations.

The operation of drawing-in new warp through drop wires, heddles, and reed is an ever-present problem in all types of weaving. In the old days it was done entirely by hand, and still is in some places — a tedious and tiresome task. The advent of the Barber-Colman Warp Drawing Machines has changed all that, so that you now have a wide range of equipment to suit all needs. Barber-Colman Warp Drawing Machines draw-in the drop wires, the heddles, and the reed *all in one operation.* A needle, making as many as 220 strokes a minute, picks up each end in sequence and draws it through the proper apertures. Each opening is correctly presented at each stroke of the needle, this selection being accomplished automatically from a metal pattern strip punched in accordance with the designer's draft. Thus the human eyes, hands, and brain have been supplanted by a mechanism that is sharper of vision, quicker of movement, and practically infallible. Results, in mills across the country, and in lands across the sea, show a consistent record of improvements and economies of many kinds. Application is *not* limited to only the larger mills; it is determined actually by the work to be done. *Barber-Colman representatives are qualified by long experience to make a detailed study of your requirements — and to make a proper recommendation if one is justified.* Ask *your* Barber-Colman representative for details.

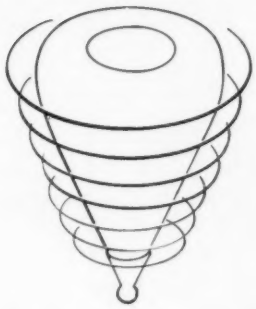
AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

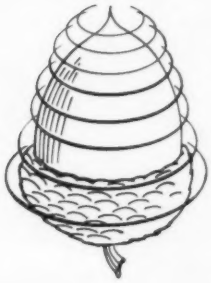
ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. — GREENVILLE, S. C., U.S.A. — MANCHESTER, ENGLAND — MUNICH, GERMANY

INDIA	MEXICO	BRAZIL	JAPAN	PAKISTAN	PAKISTAN
Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Quimanil S.A. Anilinas e Representacoes Rua Glicerio 537/547 Caixa 5658 e 3431 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha No. 7 Awajimchi 1-Chome Higashi-ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr.) Ltd. 27 Kothari Building Napier Road Karachi 2, Pakistan



TOP DRIVE or ACORN DRIVE?



U S BOBBIN

makes the BEST of both!

Personnel of U S Bobbin & Shuttle Co. have been very closely associated with the Top Drive principle in the bobbin art since its first introduction to American mills. In the manufacturing of these quills and warp bobbins we have developed a "know how" of which we are justly proud . . . and we offer the benefits of this valuable accumulated experience to any interested mill.

A competent U S Field Engineer will contact you promptly, on request.

U S BOBBIN & SHUTTLE CO.

Manufacturing Plants

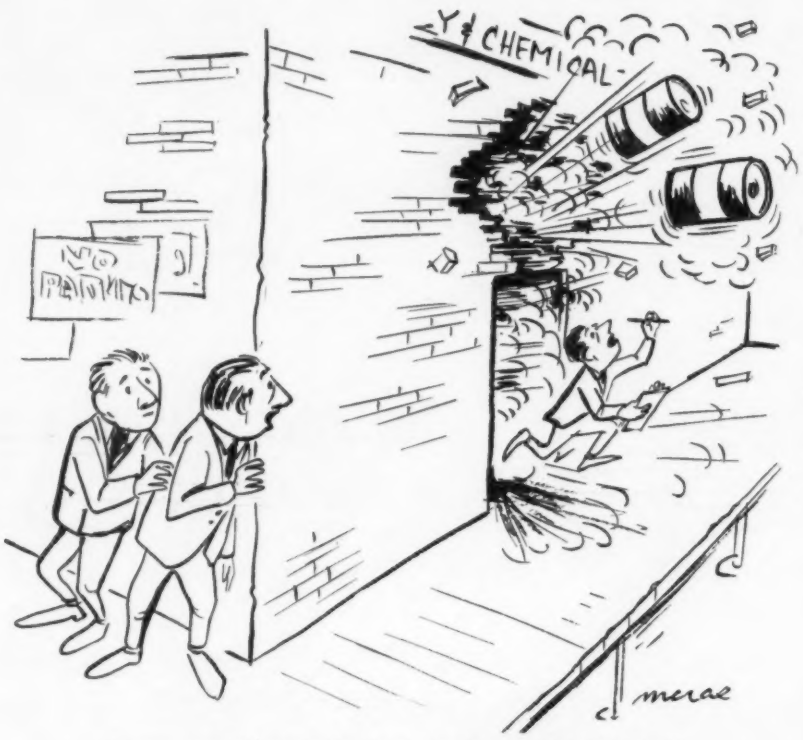
LAWRENCE, MASS. • GREENVILLE, S. C.

General Sales Office LAWRENCE, MASS.

Southern Division Headquarters: 428 Birnie St., GREENVILLE, S. C.

For information, contact either Sales Office; or our Technical Field Representatives located in Charlotte, Gastonia, Asheville, Nutley, N. J., North Attleboro, Mass. Supply Houses: Birmingham, Dallas, Los Angeles.

SI



"There goes Si after the final check on that last batch!"

Seriously, all of us at Seydel-Wooley pride ourselves on being sticklers for accuracy.

We're on constant guard to assure you of steady, never-varying quality, regardless of the product involved.

We realize that should our compounds vary, even slightly from batch to batch, that your overall quality could be effected.

So, we check . . check . . check . . check . . check . .

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

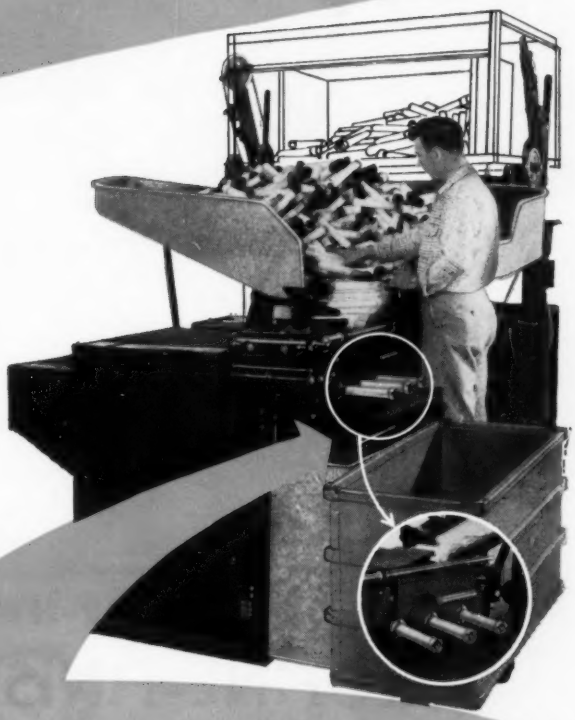
Headquarters for textile chemicals

SEYDEL-WOOLLEY & CO.

SEYCO

748 RICE STREET, ATLANTA, GEORGIA

THIS IS EXPENSIVE AND DANGEROUS



THIS IS ECONOMICAL AND SAFE

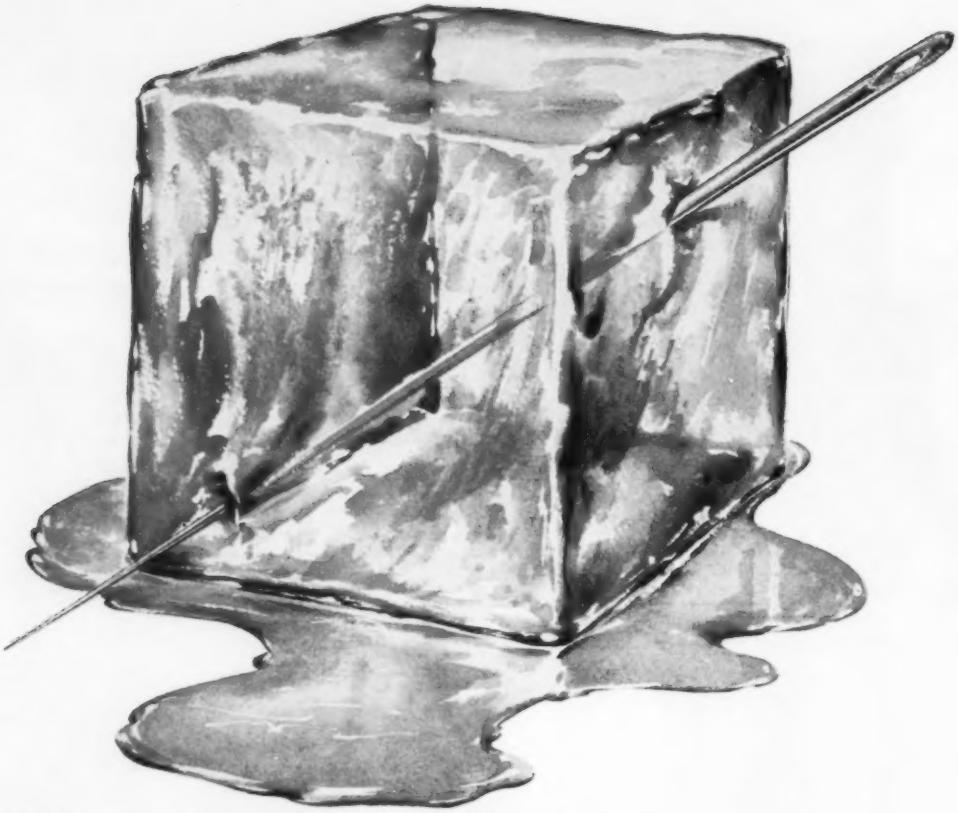
New Type M Provides a completely safe method of cleaning roving bobbins.

Works equally well on COTTON and SPUN SYNTHETICS.

For complete information on the advantages of New Type M—consult

THE Terrell MACHINE COMPANY, INCORPORATED

CHARLOTTE, NORTH CAROLINA



NO NEEDLE BURN WHEN YOU SEW WITH

PROFINE-FINISHED FABRICS!

When you sew a Profine-finished fabric, you get protection an ice-cooled needle could not provide. Well-known finishing plants such as *North Carolina Finishing Company* use Profine to assure better sewability for their fabrics.

Profine is a quality finishing agent with some exceptional advantages:
It assures:
Cooler sewing...no needle burn.
Stronger seams.
Higher speed cutting.
Better abrasion resistance.
Faster Production.

It will pay you to specify Profine finishing for *your* threads or yarns or fabrics.

Profine

MADE BY PROCTER & GAMBLE
Textile Finishes Sales Dept. **Cincinnati, Ohio**

Makers of Olate, Proxols, Orvus and Kyro products — for smoother textile processing.

RECOMMENDED BY FIBER MANUFACTURERS • USED BY LEADING FINISHING PLANTS

The New Model RZ Napper

MONFORTS *Cloth*

finishing equipment

Now Sold and Serviced by COCKER

Monforts Equipment has valuable exclusive features which enable you to do a better and more economical job of cloth finishing. Shown here is one of the outstanding machines in the Monforts line.

THE NEW MODEL RZ NAPPER: This machine has distinct advantages over other types of nappers. 1. Cloth speed and napping effect are synchronized to produce unvarying results. 2. All napping rolls are *gear driven* and can be removed for cleaning and grinding, *leaving journals, bearings and gears in the machine*. This eliminates the possibility of damage and need ot realignment, and it takes only two minutes to remove each roll. 3. Napping effect is automatically maintained when cloth speed is changed. 4. Permits infinitely variable cloth speeds between 8 and 50 yds. p.m. 5. Infinitely variable settings can be quickly and easily made and can be checked on indicators. 6. All gearing and drives are separated from the napping area and completely protected against dust.

Let us give you full information about this outstanding Model RZ Napper.

Control Panel: (top dial) Speed Indicator; (2nd pair) Pile and Counterpile Indicators; (middle) Cloth Speed Control; (next) Pile and Counterpile Control; (lowest) Cloth Tension Control.

Other Monforts Machines

- **Shearing and Cropping Machines**
- **Tenter Frames**
- **High Production Single & Double Shearers**
- **Rotary Presses**
- **2 and 4 Roll Padders for Moisture Extraction, Impregnating, & Dyeing**
- **All Types of Cloth Room Machines for Measuring, Doubling, Rolling, & Folding**
- **Tensionless Baking, Curing, and Drying Machines**

THE LEADER AROUND THE WORLD

COCKER Machine and Foundry Co., Gastonia, N. C.

Monforts is represented in Northeastern States by: Texplant Corporation, Stamford, Conn.

A combination...for relaxation at Home

Laminated plastics... a combination of properties at work

It takes a combination of properties to satisfy many of your basic material requirements. Synthane laminated plastics provide a unique combination of mechanical, electrical and chemical properties plus ease of machining.

Synthane non-sagging pirn caps are strong, dimensionally stable and super-smooth. They permit drawing of nylon from wooden, paper or other types of pirns at any position without snagging or damaging yarn in any way. Special "O" ring design locks cap securely to pirn. Hard and tough, Synthane takes rough handling, gives long service life. Synthane is also light in weight and possesses excellent resistance to wear and moisture.

Property combinations! Synthane has them...in over 30 individual grades...sheets, rods, tubes, moldings and completely fabricated parts. Send for free illustrated catalog today.

DIMENSIONAL STABILITY

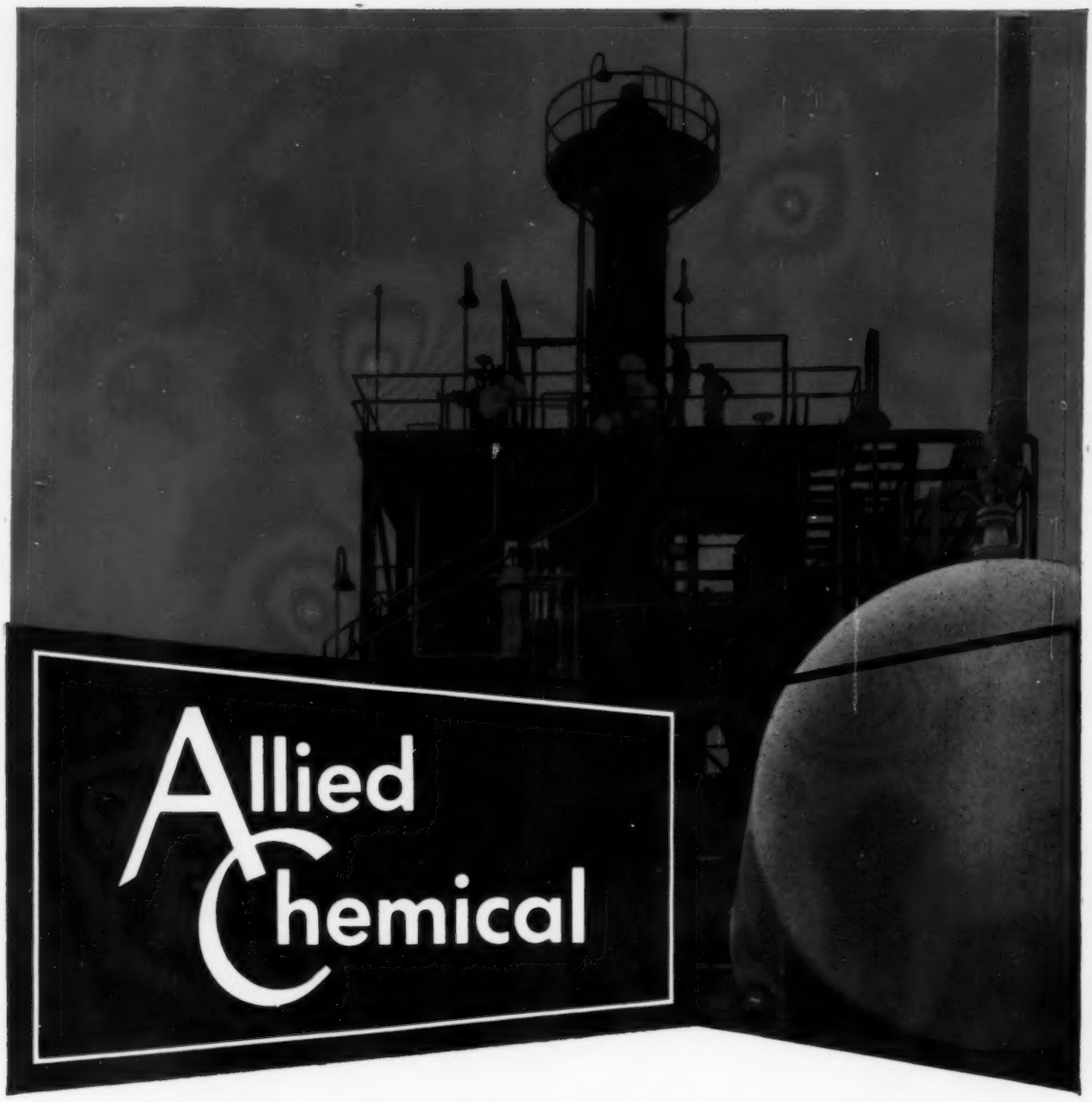
MOISTURE RESISTANCE

LIGHT WEIGHT

IMPACT STRENGTH

SYNTHANE

SYNTHANE CORPORATION, 9 RIVER ROAD, OAKS, PA.



ETHANOLAMINES

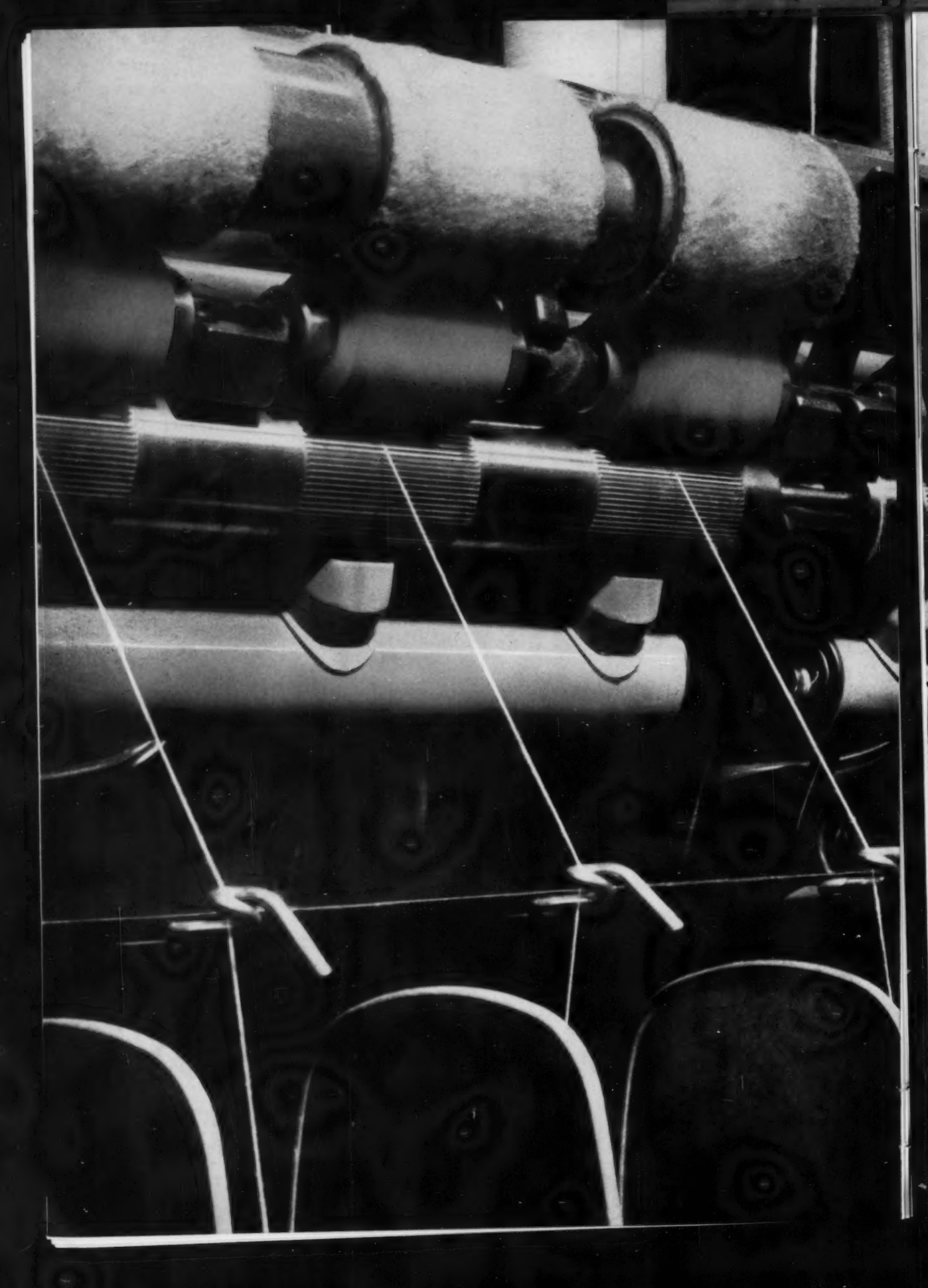
Need mono-, di-, or triethanolamine? Allied's Orange, Texas, plant — most modern in the industry—can supply you with ethanolamines consistently above standard specifications. Shipments in tank cars, tank trucks or 55-gallon drums available from Orange, Texas. Nationwide stocks for delivery by tank truck and 55-gallon drums. Phone or write for samples, quotations, literature, technical service with no obligation.

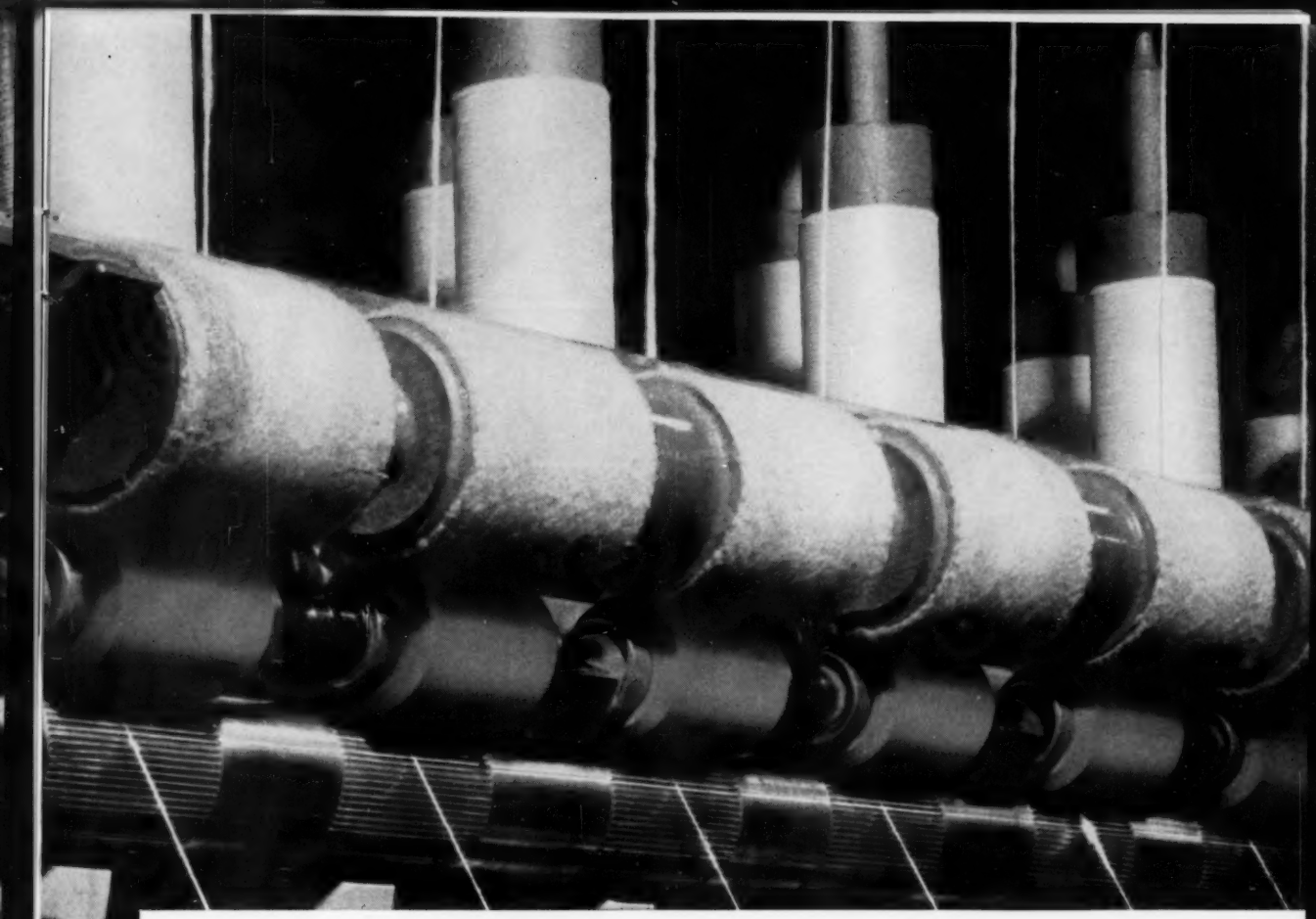
Dept. EA 2-29-3

Allied Chemical — NITROGEN DIVISION

Ethanolamines • Ethylene Oxide • Ethylene Glycols • Urea • Formaldehyde • U. F. Concentrate—85 • Anhydrous Ammonia • Ammonia Liquor • Ammonium Sulfate • Sodium Nitrate • Methanol • Nitrogen Solutions • Nitrogen Tetroxide • Fertilizers & Feed Supplements

40 Rector Street, New York 6, N. Y.





Not a lap-up in sight!

... BECAUSE
THEY'RE USING
ARMSTRONG J-490
ACCOTEX COTS
—WITH BUILT-IN
LAP RESISTANCE

Armstrong J-490 Accotex® Cots reduce lap-ups no matter what you're spinning—natural fibers, synthetics, or blends.

The reason? J-490 Cots have built-in lap resistance. They're made of a patented synthetic rubber compound that eliminates the basic cause of lapping—electrical attraction between cot and fiber. In fact, the J-490's actually tend to *repel* broken ends.

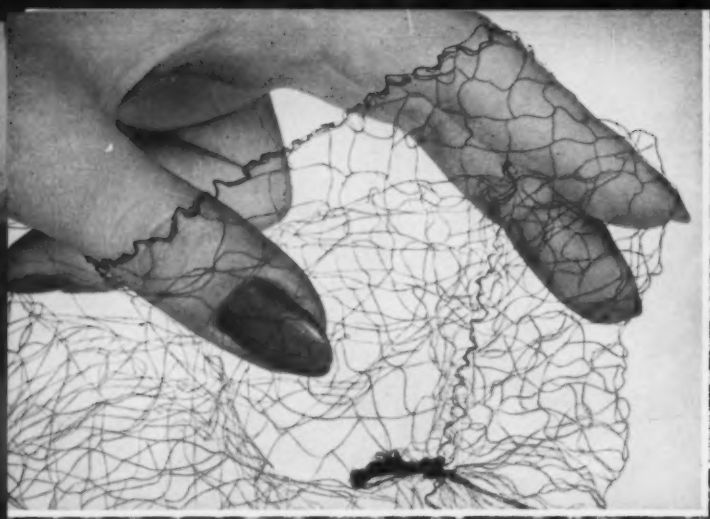
There are more good reasons for using J-490 Cots, too. They're exceptionally smooth and clean running, with no rough fillers to pull short fibers from stock and cause excessive ends down. And just an occasional re-buffing keeps the J-490 spinning like new . . . turning out strong, uniform yarn for years.

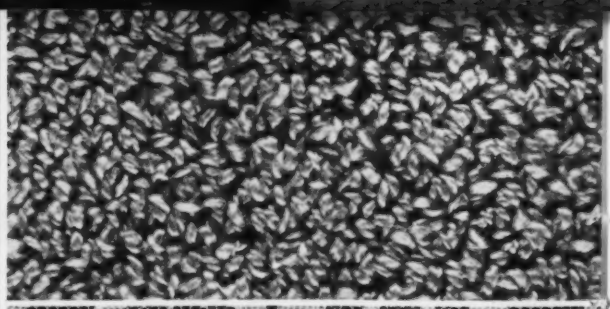
Ask your Armstrong man about a test side of the J-490's. Or write to Armstrong Cork Co., 6506 Ivy St., Lancaster, Pa.

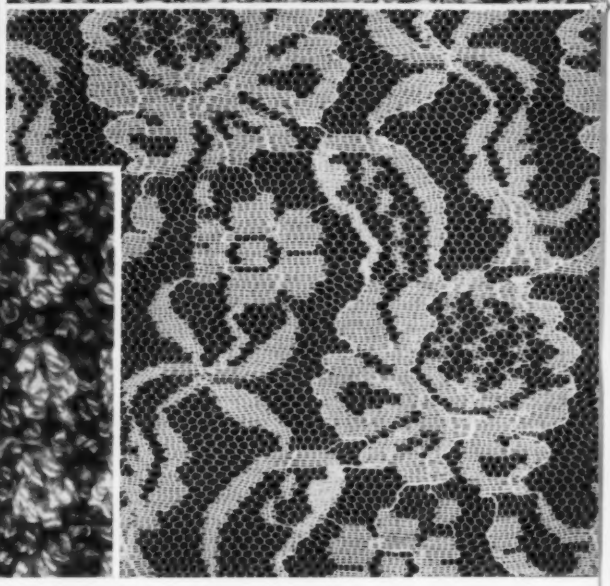
If eyebrowing is a problem in your spinning room, try the Armstrong NO-742-S Cot. Its "constant friction" surface packs waste well back under clearers—stops eyebrows from forming.

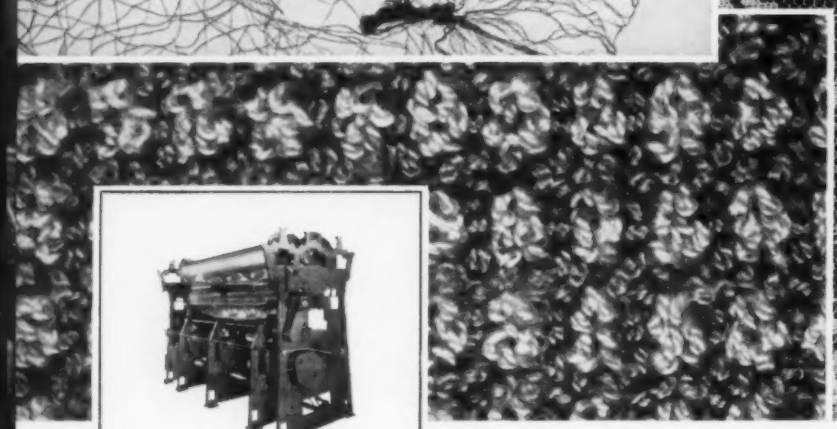
Armstrong ACCOTEX COTS

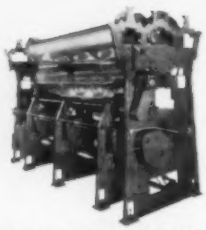
. . . used wherever performance counts











World's fastest 10-bar Raschel knitter

—from hairnets to heavy carpet

ALL KNITTED ON THE KIDDE KNITTER

Why is the Kidde Knitter the most widely used Raschel type machine in the world? The answer is exceptional versatility coupled with outstanding speed and reliability.

The range of gauges of the Kidde Knitter will produce anything from the sheerest tulle to heavy carpet — all with equal dependability. And special attachments make it even more versatile:

- A sinker bar produces tighter stitches . . . eliminates selvage troubles.
- A power let-off attachment for controlling rubber beams improves quality of elastic fabrics.
- A power yarn feed assures uniform quality at high speeds and permits the use of large warps.

These are just a few of the advantages that account for the popularity of the Kidde Knitter, both with the knitter who specializes in one type fabric and the knitter who depends on flexibility to meet the requirements of his trade. If you specialize in any one of the following fabrics . . . elastic fabrics, tulle and various types of net, lace and lace edgings, shoe cloth, laundry nets, sport shirtings or carpeting . . . or if you need versatility encompassing many of these types . . . the Kidde Raschel Type Knitter can give you faster, more economical, more dependable production.

SEND FOR FABRIC SAMPLES

We will gladly send you swatches of fabric and complete information on the range, speed and quality of production possible on the Kidde Knitter. Write today for details. Dept. KB1.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

EATON

DYNAMATIC®

SINGLE PACKAGE

FRACTIONAL HP AJUSTO-SPEDE® DRIVES

Provide Stepless Adjustable Speed from an AC Power Source

STANDARD

WITH FRICTION BRAKE

WITH SPEED REDUCER

Sizes and Types for Hundreds of Industrial Applications

Dynamatic Ajusto-Spede® Drives, part of a family of diversified eddy-current equipment, provide an economical solution to many adjustable speed drive problems.

The Fractional Horsepower Ajusto-Spede, a single package design, combines an AC constant speed induction motor, eddy-current coupling, and electronic control. Standard modifications provide for the addition of electrically operated fail safe friction brakes, or speed reducers with numerous gear reduction ratios.

Fractional Horsepower Ajusto-Spede Drive power is taken directly from 115/220 volt, single phase or 220/440 volt, 3 phase lines. Sizes are ¼, ⅓, ½ and ¾ horsepower at 1600 RPM; ½, ¾ and 1 horsepower at 3200 RPM.

Friction brakes for quick stopping or fast cycling operation are furnished in two capacities—1½ and 3 pounds feet of torque.

Gear reductions with 10 ratios between 5-to-1 and 100-to-1 are supplied with 1600 RPM Ajusto-Spedes.

Ajusto-Spede® Advantages

- ★ **Constant torque speed range: 25 to 1 with either 1600 RPM or 3200 RPM Ajusto-Spedes.**
- ★ **Control accuracy: 2 per cent of top speed at any point within the speed range.**
- ★ **Minimum wiring to power line.**
- ★ **Remote "one knob" control operation up to 100 feet.**
- ★ **Rugged plug-in type integral one-tube electronic control.**
- ★ **Permanently sealed grease-packed bearings.**

For more detailed information, write for your free copy of the Dynamatic Fractional Horsepower Ajusto-Spede Bulletin, FAS-5.

EATON MANUFACTURING COMPANY — DYNAMATIC DIVISION

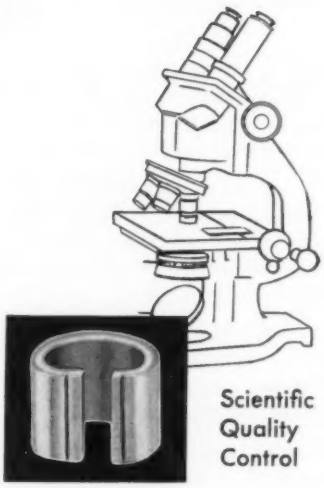
3307 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

When it comes to Precision,

CARTER hands it to you!

Carter Travelers are precision made . . . precision tested, and they hand you greater profits, through savings. Using Carter Travelers, quality goes up, and production goes up, but costs come down. You'll have less ends down, smoother running work at higher spindle speeds, and stronger, finer yarn.

Metallurgical engineers check every step in manufacturing Carter Travelers, and make precision tests in Carter's modern laboratory, to assure absolute uniformity of weight, temper, shape and the constant high quality of Carter Travelers.



Scientific Quality Control

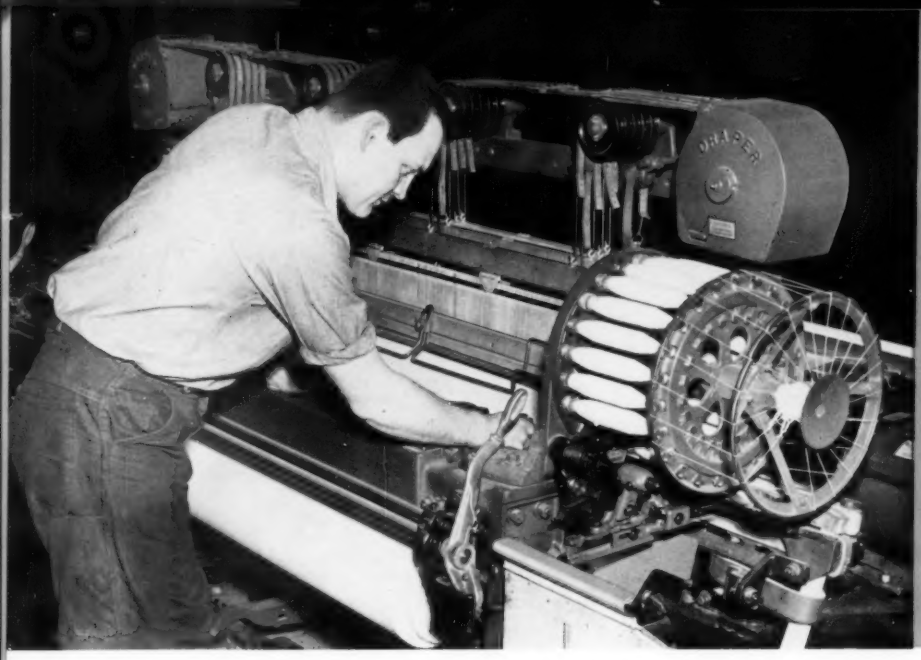
CARTER TRAVELER COMPANY

Division of A. B. CARTER, INC., GASTONIA, N. C.

Manufacturers of The Boyce Weavers Knotter

REPRESENTATIVES

R. A. Haynes, Special Representative ..114 W. Fifth Ave., Gastonia, N. C.
W. L. Rankin .....501 S. Chester St., Gastonia, N. C.
D. E. Phillips .....2702 Garden Lakes Blvd., Rome, Georgia
P. L. Piercy .....128 Hudson St., Spartanburg, S. C.
J. R. Richie .....3014 Lewis Farm Road, Raleigh, N. C.
J. K. Davis .....P. O. Box No. 129, Auburn, Ala.
C. E. Herrick .....44 Franklin St., Providence, R. I.
Hugh Williams & Co. .....47 Colborne St., Toronto 1, Canada

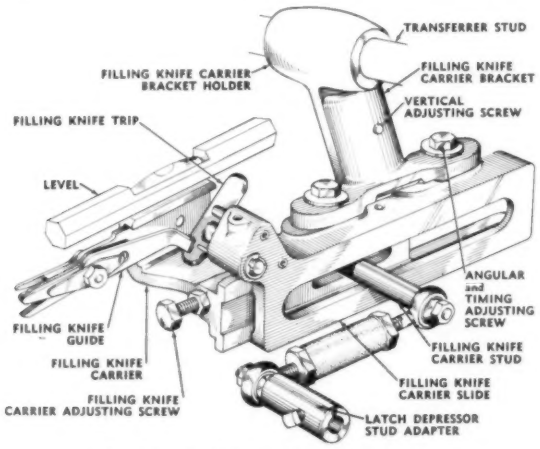


No. 9 of a Series

DRAPER LOOM FIXING

Setting Instructions For No. 25 Draper Thread Cutter*

Maximum loom production and efficiency are of prime importance to the successful operation of your mill. Only by standardized settings, **used by all loomfixers,** can these results be realized.



Thread Cutter illustrated in above position for ease of parts identification.

INSTRUCTIONS FOR SETTING

With Filling Feeler Indicating for transfer, pick Shuttle to R. H. Box.

Apply assembled Thread Cutter to Transferrer Stud, and bring Lay forward until Bunter is 1/8" from Latch Finger.

Position Thread Cutter so that knives are centrally located lengthwise in Thread Cutter slot in shuttle. Level knives by placing level on top edge of Filling Knife Carrier. This locates Filling Knife Carrier Slide about 4½° from horizontal. Tighten screws on Filling Knife Carrier Bracket Holder on Transferrer Stud.

Loosen Vertical Adjusting Screw, and position Filling Knife (Lower) slightly above lower edge of slot in shuttle and bottom of Front Box Plate opening. Tighten Vertical Adjusting Screw.

Set Filling Knives to project 1/4" through Front Box Plate opening with Filling Knife Carrier Adjusting Screw head bearing against lower edge of Front Box Plate. Secure Filling Knife Carrier Adjusting Screw with check nut.

Assemble Latch Depressor Stud Adapter to Latch Depressor Stud — also Filling Knife Carrier Stud to Filling Knife Carrier (do not tighten either). With Latch and Bunter still 1/8" apart, position Carrier so that Carrier Adjusting Screw touches bottom edge of Front Box Plate. Tighten nut on Filling Knife Carrier Stud.

Operate Transferrer by hand. The Filling Knives should be closed before bobbin is pushed out of the shuttle. To make this setting, loosen Angular and Time Adjusting Screws and position slide for proper relationship of Filling Knife Trip and Filling Knife Guide (Steel). Tighten Screws. Check position of Filling Knife Carrier Stud in slot, and adjust Carrier Assembly to Latch Depressor Stud so that all parts move freely; then tighten set screw in Adapter.

Lubricate all moving parts **sparingly.**

** Condensed version.*

DRAPER CORPORATION

Advertising Department (T. I. 9)
Hopedale, Massachusetts

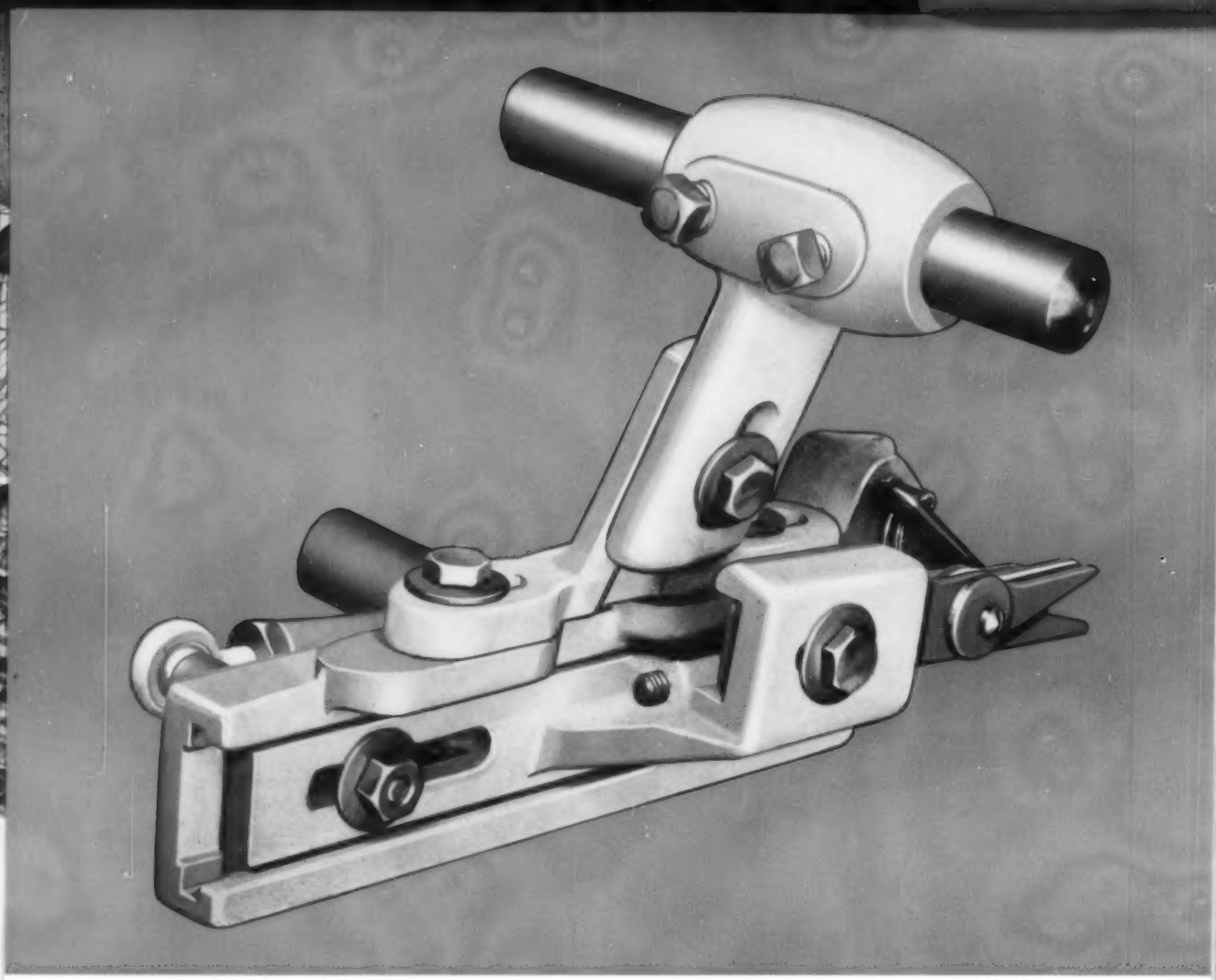
Please send complete Setting Instructions for #25 Draper Thread Cutter.

Name_____

Position_____

Company_____

Address_____



23,817 NOW IN USE
IN MILLS THROUGHOUT THE WORLD

Improved Filling Knife Assembly cuts and holds better on yarns ranging from 15 denier monofilament nylon to 4's cotton flannel napping.

. . . a sales record which proves the acceptance of the new #25 Draper Thread Cutter.*

Reasons for this widespread acceptance are:

1. Maintenance costs are reduced with 20 fewer parts used in assembly.
2. It is easily applied without changing existing parts on the loom.
3. Settings are easier to make — easier to maintain.
4. Drag-ins are greatly reduced.

23,817 mill applications also proves the #25 Draper thread cutter, with its full range of adjustments, increases production and lowers cost.

*Patents Pending

DRAPER CORPORATION

HOPEDALE, MASS.

ATLANTA, GA.
GREENSBORO, N. C.
SPARTANBURG, S. C.

THIS MAN IS MAKING
HIS REPUTATION . . .

DOW

HAVE YOU CHECKED THE SAVINGS YOU MIGHT GET WITH 73%?

The gentleman above has just been struck by an idea. It may very well save his company an appreciable amount of money. The thought: Dow caustic soda in 73% solution is probably *his* best buy, too.

If someone in *your* organization hasn't checked the changed caustic picture lately, you may be missing this chance to save. Hundreds of caustic users *have* discovered the new economy of Dow's 73%. Why an economy? Because today's *increased freight rates* more than cancel out the narrow price difference between 50% and 73%.

A second point of savings, particularly for greater volume users, is the *unloading operation*. Many man-hours are saved because 73% unloads in the same amount of time as a car containing a lower concentration.

A Dow Technical Service man can give you an accurate picture of the savings you could realize with 73%. And don't rule out 73% even if you're now on solid or flake. The pertinent, factual information you get so easily is one of the advantages of dealing with Dow. THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. AL 392F-1

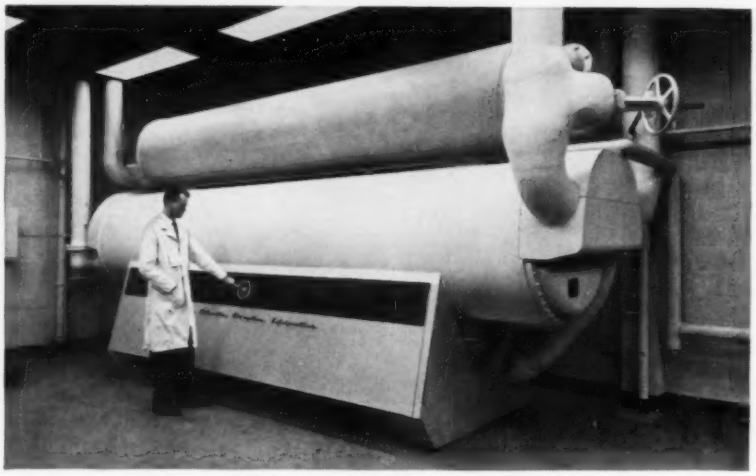
you can depend on DOW CHEMICALS

DOW

Carrier Textile News

Most Economical Refrigerating Machine of 1956

New Carrier Absorption Machine Cools Water With Steam



CARRIER ABSORPTION MACHINES are so simple in design you can carry all the spare parts for even the largest machine in a brief case. They are available in sizes with capacities to fit a wide range of needs—from 100 to 700 tons of cooling.

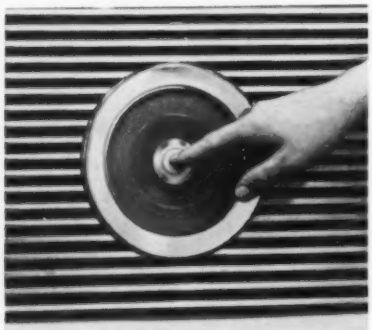
From Carrier—the only people who offer all ways to add cooling on any job—now comes a new absorption machine that cools with low-pressure steam! This cost-cutting water-chilling machine fits easily into your present evaporative cooling system, gives you complete control of temperature and humidity.

Carrier Absorption Machines are simple to install and maintain. The only moving parts are three small pumps and motors, requiring simple maintenance only. No large drivers or switch gear to require attention.

And the machine is safe. Ordinary tap water is the refrigerant. A simple salt is the absorbent. Nothing could be safer.

Carrier Absorption Machines have been performing dependably for years in scores of famous buildings and plants. They serve distinguished companies in 34 states and many foreign countries. The quality materials and skilled workmanship that have made Carrier the most famous name in air conditioning are part of every machine.

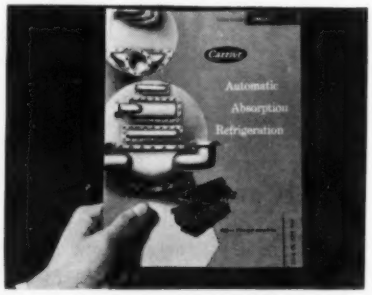
Operated by Start-and-Stop Push Button



AS EASY AS RINGING A DOORBELL. No highly trained operators are required to start the Carrier Absorption Machine in the morning, shut it down at night. Electronic controls do all the "thinking."

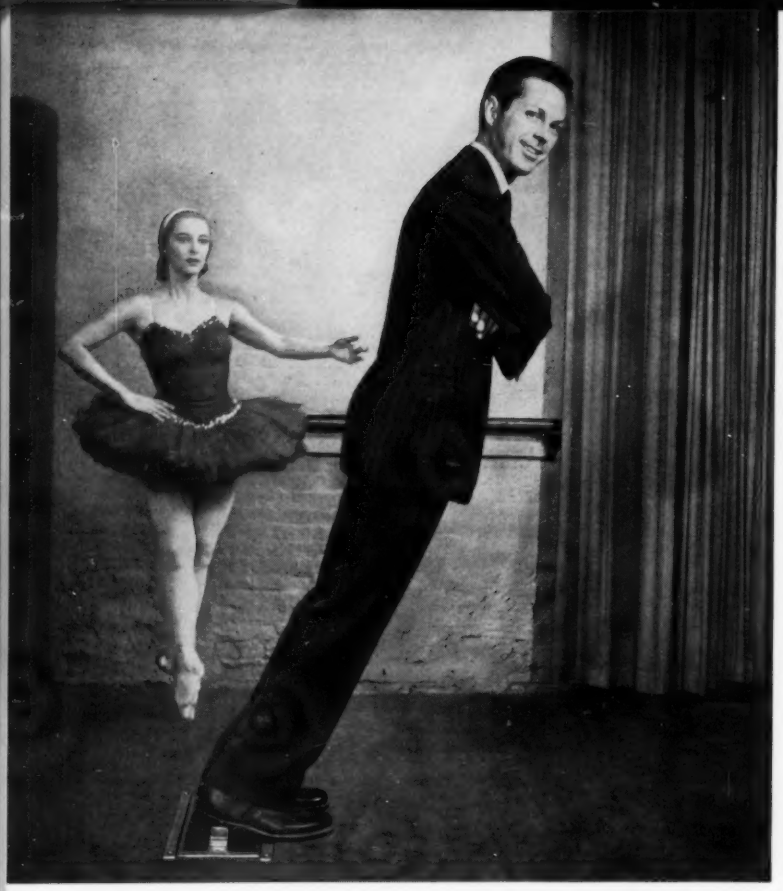
Fully automatic... doesn't need highly trained operator

You push a single button on the front of the machine, and electronic controls take over. Push the button again, and the system shuts down. In between, the Carrier Absorption Machine follows the rise and fall of the load from maximum capacity to zero capacity. And the new Carrier Automatic Absorption Machine can't be damaged by overloads.



Write for Free Booklet

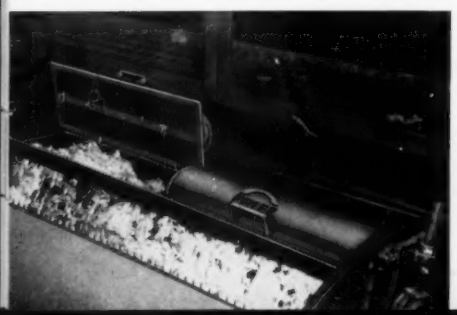
Find out how the Carrier Automatic Absorption Refrigerating Machine can be the heart of any air conditioning system. For your copy of a new booklet on Carrier Absorption Refrigeration, just call the nearest Carrier office. Or write Carrier Corporation, Syracuse, New York.



NOT NAILED TO THE FLOOR! Here's an idea for publicity men who used to create "gag shots" by nailing down shoes. Just use a piece of iron on the heel of the shoe and an Eriez Magnet set in the floor. To textile men, however, this demonstrates another idea — powerful magnetic action which can quickly be put to work pulling dangerous tramp iron out of processing lines in cotton, woolen, rayon and waste mills . . . tramp iron which causes fires, machinery damage and loss of production. *All Eriez Magnets are non-electric, self-contained. They operate without wires or attachments. Best of all their magnetic power lasts a lifetime. The first cost is the last.*

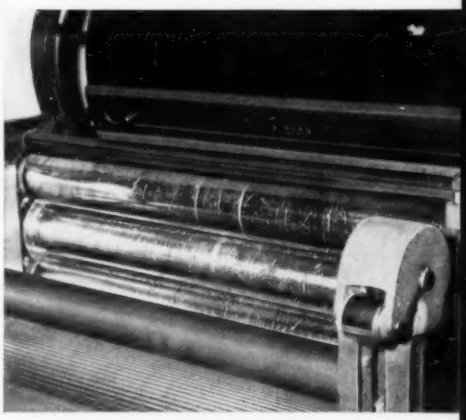
MAGNETIC IDEAS FROM ERIEZ

ERIEZ SPIKED APRON MAGNET PREVENTS FIRES. Designed especially for textile use, these magnets pull dangerous tramp iron from material moving in processing lines in cotton, waste and woolen mills. Reports show that equipment protected by these magnets extends card and garnett clothing life four and five times. More important is the added benefit of Eriez Permanent Non-electric Magnets as a means of fire prevention, by removal of tramp iron. Eriez Spiked Apron Magnets are so efficient they bear the Associated Factory Mutual Stamp of Approval. A recent survey showed that *9 out of 10* mills preferred to equip with Eriez Permanent Magnets. Want more information? . . . request Bulletin 563.



ERIEZ HI-POWR

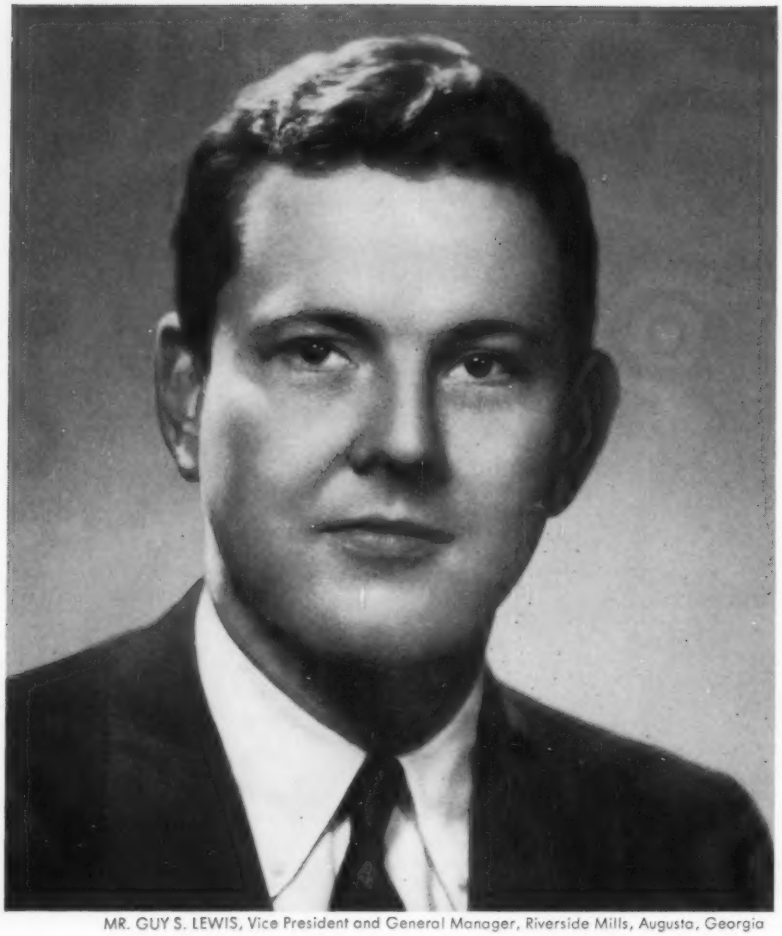
NO METAL MEDDLES IN THIS COTTON LINE. Whitney Cotton Mills, Inc., Hamden, Conn., found that an inexpensive Eriez Magnetic Hump was the solution to dangerous fires and costly machine damage caused by tramp iron. The magnet, designed to remove nails, wire, pins, etc., from cotton tailings used for furniture backing, is located in the pneumatic line between a picker and condenser. Previously, tramp iron did extensive damage to garnetts and caused considerable downtime. Since installing the Magnetic Hump, production has increased, downtime has been eliminated, and an annual repair saving of approximately $3,000 for each of three garnetts has resulted.



THE WOEFUL ROLE OF PICKER CALENDER ROLLS. When's the last time you checked your calender rolls? Did they look like those above . . . damaged by pieces of stray metal that left lasting impressions, and also damaged lickerin and card clothing? Chances are, your own equipment has also suffered because of spikes from aprons, ring travelers, nails, screws, bottle tops, etc. But now you can prevent machinery damage, reduce downtime, and eliminate poor card performance with an Eriez Permanent Non-electric Magnet. Why not invite an Eriez representative to look at your equipment? He'll be glad to survey your plant and recommend one of the many Eriez Magnets designed specifically for the textile industry.

Eriez' free booklet "Magnetic Ideas" can help you. Send for it without obligation. Address: Eriez Manufacturing Company, 72F Magnet Drive, Erie, Pa. Or, on your specific request Eriez' factory-trained field men backed by Eriez' laboratory and engineering know-how will be happy to study your particular problem, make a plant survey and offer helpful "Magnetic Ideas".

An Eye to the Future... An Ear to the Ground



MR. GUY S. LEWIS, Vice President and General Manager, Riverside Mills, Augusta, Georgia

"You cannot stand still in this business... either you move forward or you disappear from sight."

That's the business philosophy of the Riverside Mills, as interpreted by Mr. Guy S. Lewis, Vice President and General Manager. And it's an important reason why Riverside Mills is a leading source of new ideas and new products in yarns for the floor covering field.

"The New Nylon Staple has performed admirably in every respect. In addition, we are particularly impressed by IRC's research efforts and results. Their new twist-setting techniques are particularly noteworthy and open new sales horizons which are so important to us here at Riverside."

THE NEW Nylon Staple

I·R·C *Industrial Rayon Corporation*

Sales Offices: 500 Fifth Avenue, New York 36, N. Y.
627 Guilford Bldg., Greensboro, N. C.

For HEATING, VENTILATING and AIR CONDITIONING

NEW...

WESTINGHOUSE AIR HANDLING COMBINATION UNITS in 13 basic sizes give you Unlimited Selection...

The most complete line for every job—Westinghouse Air Handling Combination Units handle from 500 to 48,500 CFM.

These versatile units, each with a choice of two coil face areas; in five coil types (see panel at right) and accessories as required, permit you to select from the broadest line in the industry.

Only Westinghouse Gives You:

- High Efficiency
- Quiet Operation
- Non-Pulsating Air Flow
- Corrosion-Resistant Construction
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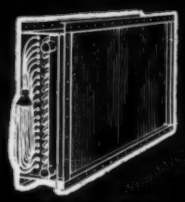
- Single Equipment Warranty

For complete application service, call your Consulting Engineer or your nearest Sturtevant Division Sales Engineer . . . or write Westinghouse Electric Corporation, Sturtevant Division, Department 7F, Hyde Park, Boston 36, Mass.

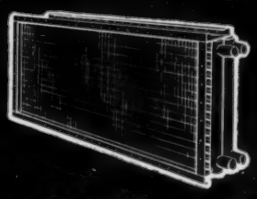
WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE...IF IT'S Westinghouse

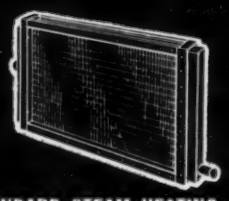
J-80591



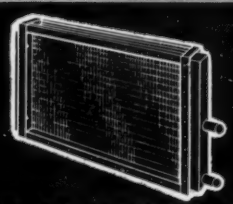
DIRECT EXPANSION FOR COOLING AND DEHUMIDIFYING . . . 3-4-5 and 6 rows deep.



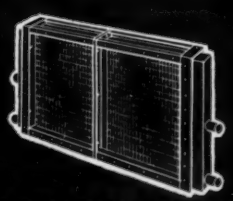
WATER COILS . . . for heating, cooling and dehumidifying—2 through 8 rows deep.



STANDARD STEAM HEATING COILS . . . for use with modulating damper control—1 and 2 rows deep with 3 fin spacings.



STEAM DISTRIBUTING TUBE COILS . . . for use with modulating steam valve control—1 and 2 rows deep with 3 fin spacings.



DUAL FEED STEAM DISTRIBUTING TUBE COILS . . . available in fin tube lengths—78 through 120 in.—1 and 2 rows deep with 3 fin spacings. Operates as two coils in single casing—supply and condensate connections at each end—eliminates stratification.

VERMONT SPOOL & BOBBIN CO.

EXTRA

INSURANCE AGAINST BASE SPLITTING

THE *NEW*

"ALUMINOX"

COVERED BASE BOBBIN!

Stop needless and costly time-outs from production due to base-splitting! Install Vermont Spool and Bobbin Company's new bobbins. With "Aluminox" covered bases, they will long outwear ordinary bobbins . . . boost your profits!

Let one of our representatives give you details of this great new bobbin . . . and explain the other extra features of our spools and bobbins that mean smoother, more economical operation for you! We'll tailor-make spools and bobbins to your specifications.

FIVE OTHER FEATURES YOU WANT

★ TRUE, FREE-RUNNING ★ LONGER LIFE
★ BRASS BUSHINGS ★ COMPETITIVE PRICE
★ SKILLED WORKMANSHIP

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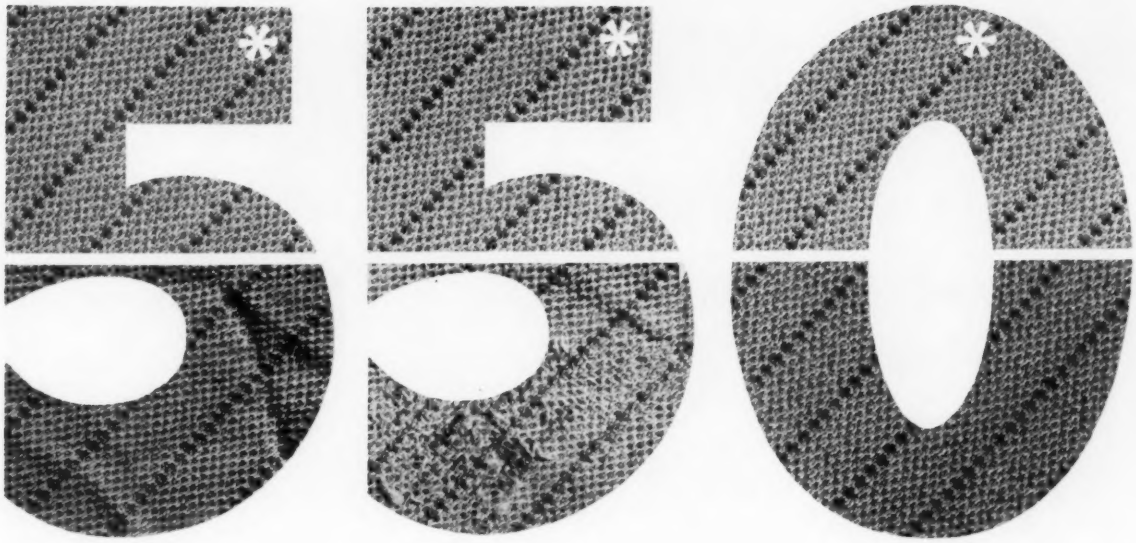
Vermont SPOOL AND BOBBIN CO.

234 SO. CHAMPLAIN ST. – BURLINGTON, VERMONT — *SUPERIOR SPOOLS AND BOBBINS SINCE 1906*



THE WICA REACTANT RESIN!

FIVE

Hangs-out five times better than untreated fabric . . . all for less than a fifth of the cost of lost buyers when the market demands full blown-up feel of reactant resin results.

FIVE

"Formidable" resistance is offered to surface abrasion . . . tensile strength, resiliency and hand is substantially increased . . . vitality of fabric is dramatically improved . . . each fibre is reinforced with penetration of WICA reactant resin 550 throughout.

ZERO

Dyed shades are effected negligibly . . . nothing impedes fabric's breathing with WICA resin 550 . . . voided orders are unheard of with alive, easy handling fabric treated with WICA reactant resin 550.

Wica

WICA CHEMICALS, INCORPORATED

OLD CONCORD ROAD • CHARLOTTE, NORTH CAROLINA

synthetic organic chemicals • textile specialties

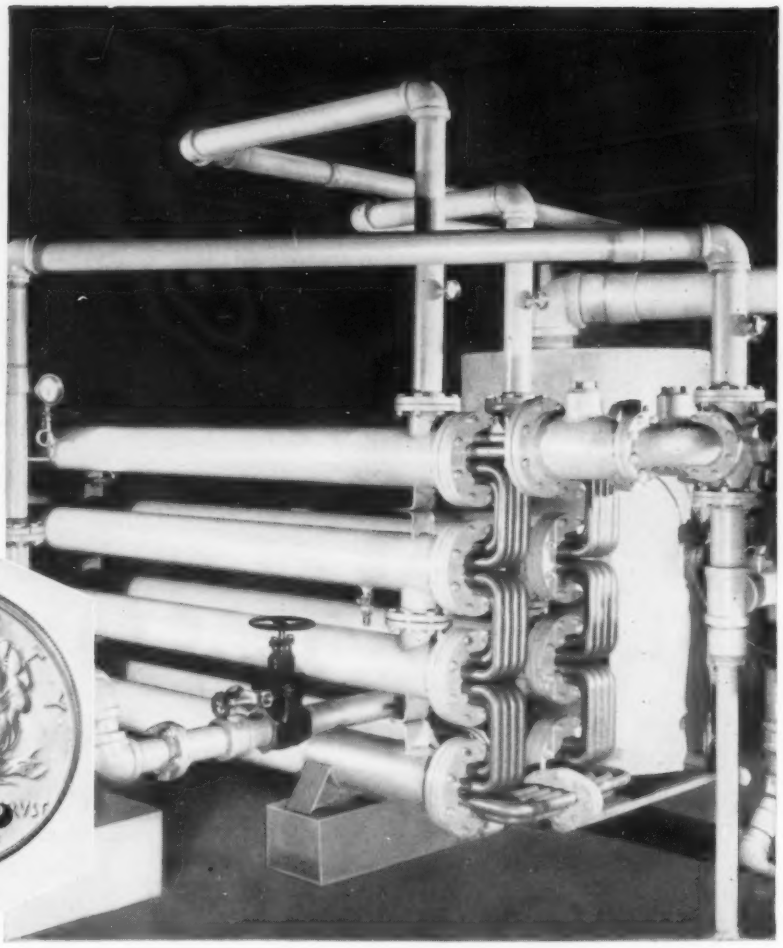
latices • adhesives

SPECTRUM ACCURACY

We will treat a sample of your fabrics on request.

For further information use Handy Return Card, Page 237

Who would think of dropping dollars down the drain?



NOBODY...but this may be happening in your plant!

And far more than single dollars are involved! Most case histories show that tens of thousands of dollars are being wasted annually in plants with heat in by-product waste water that do not have a Bready System of Waste Heat Recovery.

Good management dictates that recovery of all wastes is extremely important in today's competitive economy. With by-product hot waste effluents one of the biggest contributors to these losses, a Bready System of Waste Heat Recovery deserves your first consideration.

So, if you are interested in seeing your dollars roll into the profit column instead of down the drain, ask for a free Bready survey of your boiler plant operation. Write, wire or phone today for details, or your plant survey.

Ludell *Manufacturing Company*

5202 WEST STATE STREET • MILWAUKEE 8, WISCONSIN

MANUFACTURERS OF BREADY SYSTEMS OF WASTE HEAT RECOVERY

Photo Courtesy Sherman Manufacturing Co., Sherman, Texas

With the STROBOTAC *this is just what a spindle and balloon look like when revolving at any speed from 400 to 100,000 rpm!*

BOOST Spinning Room Efficiency with the **STROBOTAC®**

For the maintenance of uniform and correct spindle or traveler speeds, the G-R STROBOTAC® has proven ideal in thousands of mills.

The STROBOTAC requires no mechanical or electrical connection to the spindle or its shafting. It is simple to use, portable, light weight, accurate, low in price — and can be operated by anyone.

Defects such as slack or dirty bands and tapes, spindles that need oiling, crooked idlers, chokes in idlers . . . under spindles . . . on bolster . . . in bobbins; spindles out of plumb or worn or crooked; crooked bobbins, bad rings or worn travelers, ring rail not level, band and tape out of whorl, split and worn bobbins, uneven or mixed or oily yarn . . . these are only some of the troubles that can be detected quickly with the STROBOTAC.

For measuring speed, the STROBOTAC is calibrated to read directly in rpm from 600 to 14,500. By indirect measurements, speeds up to 100,000 rpm can be ascertained.

When used as a stroboscope, it is simple to make any rotating or reciprocating machine or part appear to revolve in s-l-o-w motion . . . even as slow as a fraction of an rpm . . . while the equipment is operating at normal speed.

Progressive mill officials are enthusiastic over the value of the STROBOTAC in reducing rejects, in increasing efficiency and forestalling troubles.

Write for Bulletin
STROBOSCOPE in TEXTILE MILLS

Type 631-BL
STROBOTAC, complete and ready for immediate operation, **$155.**

WE SELL DIRECT
Prices are net, f.o.b. Cambridge or West Concord, Mass.

Strobotac®

275 Massachusetts Avenue, Cambridge 39, Massachusetts

90 West Street **NEW YORK 6**
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1000 N. Seward St. **LOS ANGELES 38**

UNIFORMITY IN TRAVELERS

UNIFORM QUALITY IN YARN PRODUCTION

Travelers that vary in dimensions or weight are apt to cause excessive ends down, and yarn of uncertain quality. Even *very* slight variations can cause expensive delays and seriously impair yarn production as mill men well know.

That's why National-Sterling Ring Travelers are carefully made to most rigid standards. Every lot of travelers is *uniform* throughout—each traveler is an exact counterpart of its fellow travelers.

Whatever fibers you're running . . . cottons, wools, synthetics, or blends . . . we can supply the right traveler to keep your production humming at top spinning and twisting speeds. And when you have the right National-Sterling traveler, you can count on getting the same identical results whenever you reorder travelers for that job. If they're *National-Sterling* Travelers, you can count on their uniformity every time.

One of our Service Engineers will be glad to help you choose the right travelers: Call the nearest office for prompt service.

MAIN OFFICE AND PLANT
354 Pine Street • Pawtucket, Rhode Island
Telephone: PAwtucket 3-7720-1

SOUTHERN OFFICE AND WAREHOUSE
P. O. Box 112 • Gaffney, South Carolina
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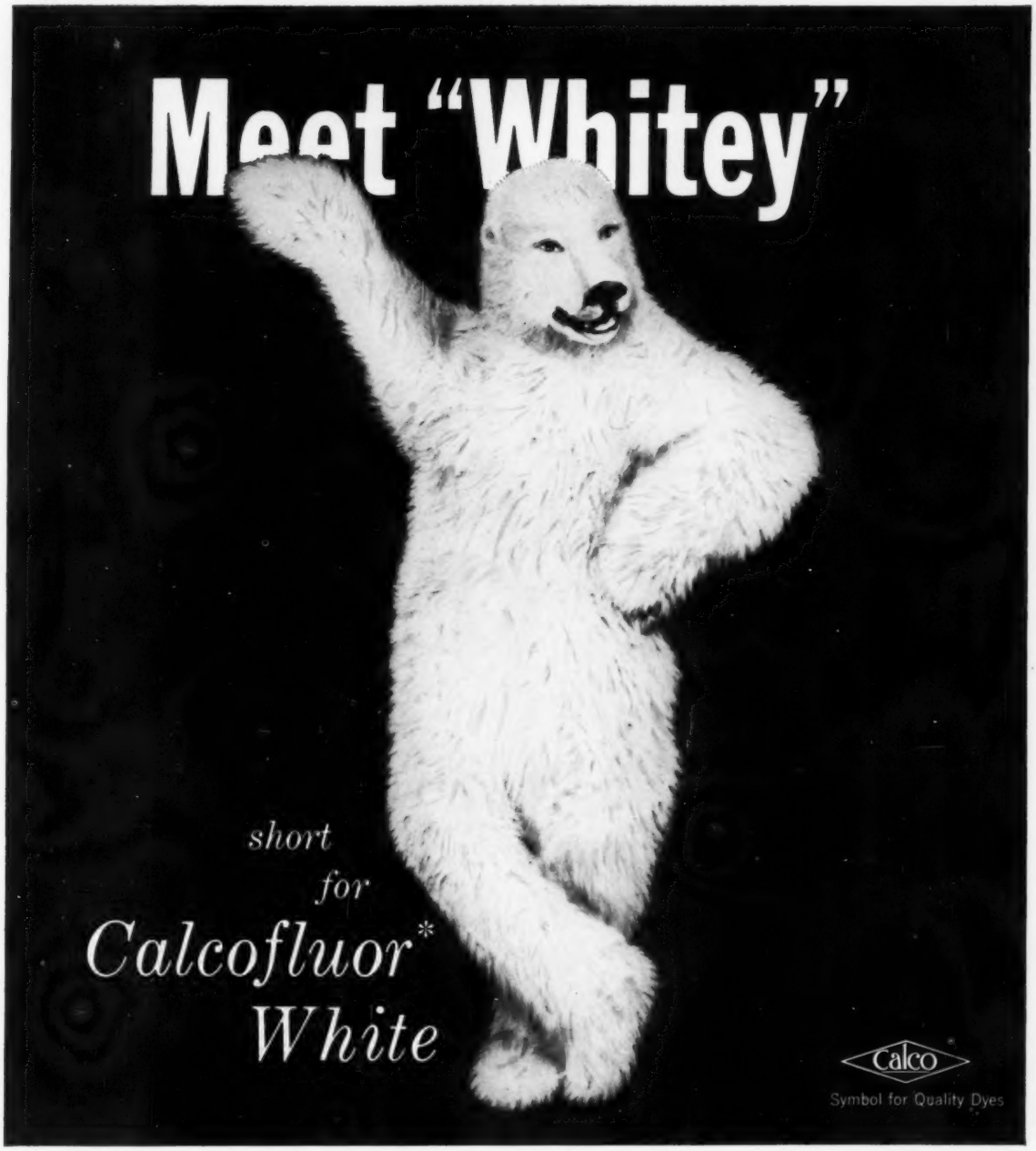
NATIONAL *Sterling* RING TRAVELERS

F. L. CHASE, JR., *Pres. & Treas.* L. E. TAYLOR, *So. Mgr.*

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES



puts dazzling new brightness in your solid or printed whites

*T. M. AMERICAN CYANAMID COMPANY

From mill to merchandise showroom to retail counters—Whitey's magic brightens everybody's disposition. Just a dash of CALCOFLUOR WHITE ST in the finishing or rinsing bath puts dazzling new "sell" into the fabric. This new brightener is simple to use—makes no special demands on techniques or equipment—and costs next to nothing per yard. Result: The whitest whites you've ever seen, solid or printed!

If Whitey is not yet working for you—send us a swatch of your untreated fabric for comparison treatment and *see* how much whiter—how much more saleable—your goods can look!

FACTS AT A GLANCE

APPLICATION: Standard equipment, no extra processing steps. Soluble. Stable in storage.

COST: Infinitesimal!

FABRICS: COTTONS primarily ...whites, bleach goods, prints, stripes, patterns.

END USES: Shirting, sheeting, toweling, dress goods, prints on white, flannel prints, uniform goods, knits, etc.

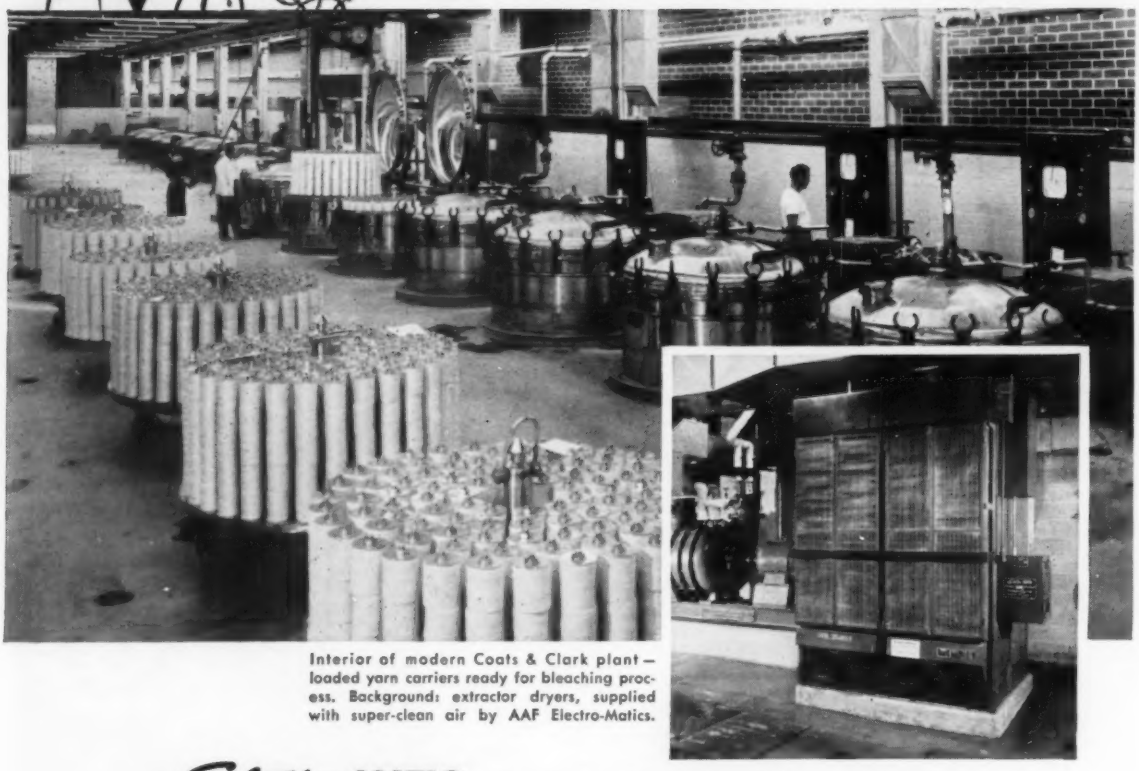
DURABILITY: Modern soaps and detergents restore whitening. Treatment virtually permanent.

CYANAMID

AMERICAN CYANAMID COMPANY, DYES DEPARTMENT
BOUND BROOK, NEW JERSEY

North American Cyanamid Limited, Montreal

Off Color Yarns
NOT ALLOWED HERE!



Interior of modern Coats & Clark plant—loaded yarn carriers ready for bleaching process. Background: extractor dryers, supplied with super-clean air by AAF Electro-Matics.

Electro-MATICs Supply Super-clean Air for Drying at Coats & Clark Plant

It takes more than just ordinary clean air to protect yarn against discoloration during the drying operation. That's why Coats & Clark, Inc., Toccoa, Georgia, demanded *super-clean* air. And that's why they insisted on AAF Electro-Matic filters.

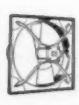
Electro-Matic eliminates the most minute dust particles. And there's no lowering of efficiency because of dust accumulation. Electro-Matic cleans *itself,* automatically, while it cleans the air . . . provides *maintained efficiency* around the clock, around the calendar.

If your operations demand *constant* super-clean air, then you need AAF's Electro-Matic, today's finest electrostatic air filter. For complete information, call your local AAF representative, or write direct for Bulletin 250.

AAF herman nelson

American Air Filter
COMPANY, INC.
275 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

Herman Nelson Unit Blowers



Herman Nelson Propeller Fans

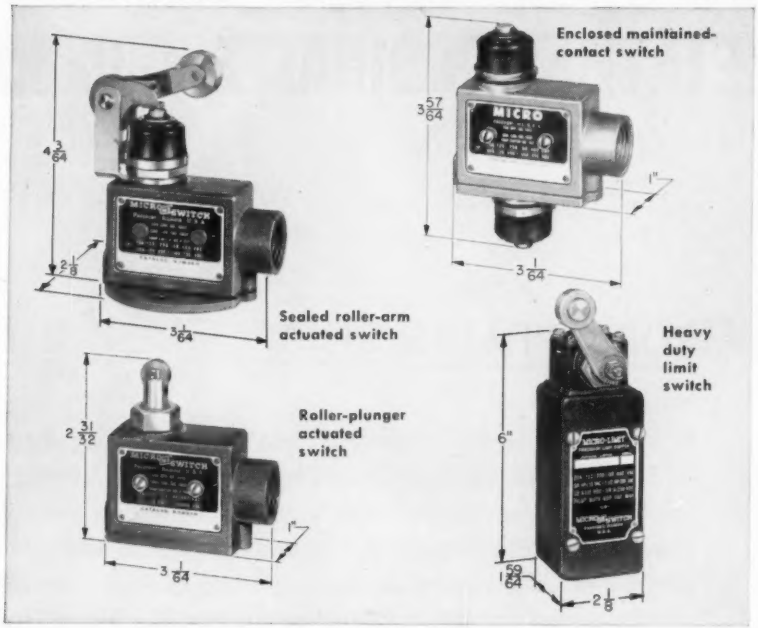
BETTER AIR IS OUR BUSINESS

Illinois Steam Heating Specialties

Air Filters and Precipitators

MICRO *precision switches*

...THEIR USE IS A PRINCIPLE OF GOOD DESIGN



These MICRO precision switches make textile operations safer—more productive

Whether you are a manufacturer of textile equipment or a plant operating man it will pay you to know ALL about MICRO precision switches.

The switches shown here were selected by plant engineers to make the operations shown at the right safer, more automatic and more productive. They are but a few of the many MICRO precision switch types now in use in hundreds of textile plants.

Sealed Roller-Arm Actuated Switch: For use with mechanically operated cams or slides. Elastomer boot protects the switching unit against effect of liquids, dust or other foreign substances. Roller arm is field adjustable through 360 degrees horizontally and 225 degrees vertically.

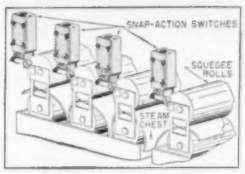
Enclosed Maintained-Contact Switch: For applications which require sustained contact after the actuating force has been released. A reset plunger enables the switch to be reset for succeeding operations. Elastomer boot prevents entrance of dust or moisture through the actuating mechanisms.

Roller-Plunger Actuated Switch: Designed for operation by cams or slides whose approach is in the same direction as the longitudinal axis of the switch. Rugged overtravel mechanism insures accurate repeat ability of the enclosed switching unit even when subjected to continual impact.

Heavy Duty Limit Switch: Ruggedly housed to withstand high humidity and linty atmospheres of textile operations. Roller arm actuator is field adjustable through 360 degrees at intervals of 0.4 degrees to any of 870 positive lock positions.

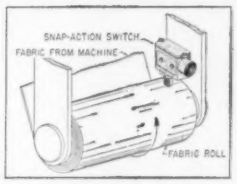
For complete information on switches for textile equipment write for the name of the distributor nearest you. MICRO SWITCH field engineering is available at your nearest branch office.

Saves Fabric and Production Loss on Bleach Range



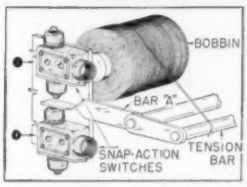
MICRO heavy duty limit switches are installed on bearing which raises—with roll. As cloth raises the switch stops the range, preventing fabric and production losses.

Controls Roll Size on Circular Knitting Machine



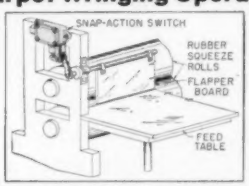
Roller-plunger actuated switch is operated by the roll when the fabric being made or processed reaches the desired roll size. Switch then stops the machine automatically.

Keeps Proper Yarn Tension for Knitting Operation



Two enclosed maintained-contact switches are used to prevent breakage of yarn due to either too high or too low tension. In either case Bar A contacts one switch or the other and shuts off the machine.

Protects Operator's Hand in Carpet Wringing Operation



Roller-arm actuated switch is operated by cam to shut off rolls in case baffleboard is pushed forward enough to catch operator's hand in the rolls. Carpet is positioned in the nip of the rolls by hand but machine will not operate until hands are withdrawn.

SEND FOR CATALOG 83
For information on a wide variety of enclosed switches.

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

FROM CELANESE FOR SPRING '57...

CELAPERM ACETATE COORDINATED COLORS

FOR APPAREL

Now . . . a new group of carefully chosen colors in the apparel field, in color-sealed Celaperm. They represent the combined thinking of foremost color experts, backed by market research. Here are all the important fashion colors . . . the widest possible range of basic shades . . . selected because they have a definite and significant place for Spring '57. We call particular attention to the new "Jewel-Case" Brilliants, developed and timed to help you get full *volume* potential from a promotional color group. See Celanese for the full story, for the brightest new color outlook in apparel today.

OFFICIAL CELAPERM COLORS FOR APPAREL:

Beige-Brown Group	C-29 Beige C-58 Golden Topaz C-27 Mink Brown C-50 Jungle Brown C-63 Brown Pearl	**Yellow Group**	C-25 Yellow C-59 Canary Diamond
Pink Group	C-42 Pink Glow C-30 Pink C-60 Flamingo	**Blue-Green Group**	C-28 Dark Green C-44 Aqua C-24 Light Blue N-957 Medium Blue
Basic Group	C-20 Red C-57 Pewter C-48 Black C-51 Navy C-22 Royal	**Jewel-Case Brilliants**	C-53 Crown Gold C-56 Imperial Jade C-55 Orange Sapphire C-52 Persian Turquoise C-54 Ruby Scepter

FEATURE STORY JEWEL-CASE BRILLIANTS: BRIGHTEST

FOR APPAREL AND HOME FURNISHINGS!

FOR HOME FURNISHINGS

Now . . . the broadest range of coordinated home furnishings colors in color-sealed Celaperm. They're the result of months of working with the home furnishings and color authorities. They offer new style stimulus in both volume and decorator markets. See highly promotional "Jewel-Case" Brilliants with an Oriental influence. See exciting interpretations of traditional colors. See clear, softened pastels. See basic staples. See how designers can use an entire coordinated range to style a complete line in Celaperm. See the whole new color picture in home furnishings at Celanese.

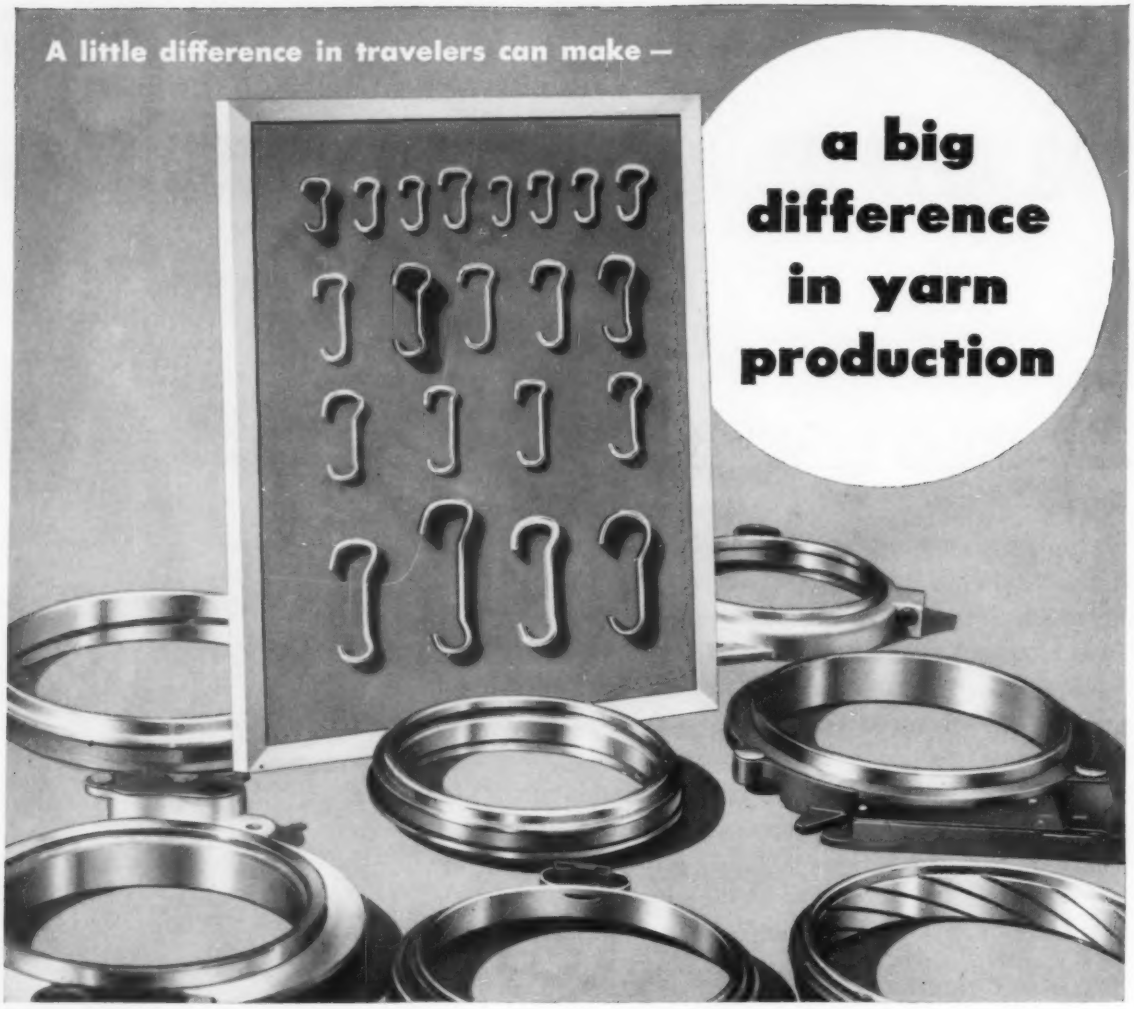
OFFICIAL CELAPERM COLORS FOR HOME FURNISHINGS:

Basic Group	C-20 Red C-51 Navy C-48 Black C-22 Royal	**Intermediate Group**	C-58 Golden Topaz C-53 Crown Gold C-62 Rose Dust C-61 Sea Mist C-57 Pewter C-34 Rose
Pastel Group	C-29 Beige C-24 Light Blue C-42 Pink Glow C-44 Aqua C-25 Yellow C-46 Mist Green	**Jewel-Case Brilliants**	C-52 Persian Turquoise C-55 Orange Sapphire C-56 Imperial Jade C-54 Ruby Scepter

Celanese

CORPORATION OF AMERICA, NEW YORK 16, N. Y. Celanese® Celaperm®

COLOR IDEA IN APPAREL AND HOME FURNISHINGS!



THE DIFFERENCE between various styles of travelers made for lubricated vertical rings, may be hard to see at a glance. But it's a very important difference.

Unless the traveler design is exactly right for the ring, much of the advantage of lubrication will be lost. Also, unless the design is exactly right for the yarn being processed, ends-down will cut production, and quality will suffer.

Whether you are running novelties like boucles, poodles, or seed yarns, — or twisting the heavier stocks normally processed on lubricated rings, Victor has the right vertical travelers to keep your production trouble-free.

You'll find it well worthwhile to check over your operations with a Victor Service Engineer. He can often show you that "headaches" you've taken for granted can be readily cured. Write, wire, or phone the nearest Victor office.

VICTOR VERTICAL TRAVELERS

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Textile Industries for June, 1956

News IN BRIEF

What a Mill Means to a Community. The Alabama Power Co. has compiled figures which show the value to a community of a new textile mill or other manufacturing plant. Every 100 employees in a plant will bring a community $590,000 more personal income per year; they will add $270,000 to bank deposits, produce $360,000

more in annual retail sales, cause four or more retail establishments to be added, and add 112 more households. For each 100 employees, the plant will contribute 296 more citizens to the community, who will vote, support churches, pay taxes, support charities, and make an all-around stronger community.

Becco Gets Bleach Patent. Becco Chemical Division, Food Machinery and Chemical Corp., has been granted U. S. Patent 2,740,689, covering a silicate-free method of bleaching. The method is a continuous hydrogen peroxide process employing an alkaline H_2O_2 solution containing a polyphosphate and a sequestering agent. [Details of the process were given in TEXTILE INDUSTRIES for December, 1955, pp. 124-125.—Eds.]

BLS Starts Seamless Hosiery Wage Survey. The Bureau of Labor Statistics has begun a survey of average hourly earnings and fringe benefits in the three primary divisions of the seamless hosiery industry — children's and infants', men's, and women's. Information obtained from the mills will be held confidential, and will be used only in statistical summaries.

National Man-Made Fibers Council? Talk in the trade of possible formation of an association of all man-made fiber producers has been revived. The proposed organization would represent producers in tariff discussions and in other matters affecting the whole industry. It would not handle promotion or other matters made impractical by the competitive interests of its members.

Tricot Standards Discussed. Members of the knitting and yarn producing trades have been holding informal meetings to discuss the possibility of weight standards for nylon tricot on an end-use basis. Any recommendations forthcoming would presumably be incorporated in similar standards now being developed by the American Standards Association.

The Market for Carpets and Rugs. A survey by The Carpet Institute brings out the following points on carpet and rug ownership, and the potential market for these floor coverings: (1) Carpets 6′ x 9′ or larger are in 65 per cent of all living rooms, and this per-

centage is not significantly affected by income except in the $3,000-a-year bracket and below. (2) The 20 per cent of householders who change residence each year account for 43 per cent of carpet and rug sales. (3) Suburban areas are more "sympathetic" to carpets and rugs. (4) Bedrooms offer the biggest potential market—only 3 out of 15 have rugs 6′ x 9′ or larger. (5) The market for carpets is broadening, e.g., farmers, an indifferent market in the past, are increasing their purchases.

Retailers Don't Want Responsibility for Labeling. Retailers have served notice through the Mercantile Section, New York Board of Trade, that they intend to resist any effort to impose on them the

duty of determining and stating the country of origin of textile imports. According to the retailers, they cannot know the origin of all fabrics made into garments which they sell, except as labeled by those having that duty under Federal law.

N. J. Dyers to Merge? A group of dyeing and finishing plants in northern New Jersey reportedly will form a unit, in which the participating companies will be semi-autonomous, to secure the advantages of group buying, better financing, and specialization.

PTI Grants New Degree. Starting with the fall semester, the Philadelphia Textile Institute will conduct a four-year course of study leading to a B.S. degree with a major in textile management and marketing.

Resurgence of Worsteds Seen. The Wool Bureau sees a reversal of a five-year trend away from

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worsteds to woolens in recent census reports. Consumption of wool on the worsted system increased 21 per cent in January and February, 1956, compared to the same period of 1955, as against a gain of 8 per cent in woolen system consumption. Total gain in apparel wool consumption for the period was 15 per cent.

Philippines to Expand Textile Production. Expansions or additions now under way or planned in the textile industry of the Philippine Islands will enable that country to produce 50 per cent of its textile requirements, compared to the present 10 per cent.

Modernization Also Brings Headaches. A mill which completed a $1½ million modernization in its bleachery some time ago reports that these new problems followed the modernization: Speed increases cause more breakdowns; a high equipment cost must be amortized; and a preventive maintenance system has become of over-riding importance.

And Now Paper Clothing. Paper clothing, consisting of coverall, undershirt, shorts, socks, and hood, was displayed at a recent Quartermaster Corps exhibition. According to the QM, the paper clothing would be useful for areas contaminated by radioactive fall-out or by bacteria, and in situations where no laundry facilities are available.

Summer Classes. At Georgia Tech: "Industrial Engineering Institute," June 11-22. Address inquiries to C. H. Taylor, Coordinator Short Courses and Conferences, Georgia Tech, Atlanta, Ga. At MIT: "Selected Topics in Textile Technology," August 20-31; "Disposal of Industrial Wastes by Biochemical Processes," August 20-31. Address inquiries to Summer Session Office, Room 7-103, Massachusetts Institute of Technology, Cambridge 39, Mass.

"Time" Version of Silk Imports Denied. Pennsylvania silk weavers deny the implication in a recent issue of *Time* that the post-war growth of Japanese silk fabric exports to the United States has been at the expense of European rather than American mills. "A Luce handling of the facts," say the American weavers as reported by the *National Federation of Textiles Bulletin;* idle silk looms in Pennsylvania and other states testify to the fact that reduction in tariff rate from 65 per cent to 30 per cent encouraged the growth of Japanese silk weaving at the expense of American industry.

Let's see, this is the year for the Greenville Show . . . . .

Here it is June and I haven't requested room reservations . . . . .

Miss Jones, take a letter. Write Textile Hall Corp., Greenville, S. C., and tell them the operating executives from our mill are planning to attend the Southern Textile Exposition and will need rooms for one night . . . . .

Yes, Sir! Now is the time, if you haven't already done it, to request housing accommodations during Show Week in Greenville — October 1-5, 1956. Don't get caught with your *plans* down!

News in Brief

Georgia City Cracks Down on Labor Organizers. The city of Dublin, Ga., has passed an ordinance which requires labor organizers to swear that they do not favor overthrowing laws on segregation, and that no money of their organization will be spent to violate or encourage violation of segregation laws, or for Communist activities. It sets a fee of $2,500, requires that the organizer must have been a resident of Dublin for more than five years, and makes the mayor and city council sole judges as to issuance of a license.

Study on Fiber Blending Available. The Textile Technical Federation of Canada has issued a report, "A Bibliographical Study of Literature Published on Fibre Blends Commencing With the Year 1948." The study gives brief abstracts of articles from the journal and patent literature for the years 1948 through 1954, apparently taken from the Abstracts section of the *Journal of the Textile Institute.* Copies of the study, Technical Bulletin No. 3, are available at $1.00 from the Federation, 223 Victoria Ave., Westmount, Montreal 6, Quebec.

"Two-Price" Cotton System Lesser of Two Evils. The New York Cotton Exchange has told Secretary of Agriculture Benson that, while it is unalterably opposed to a two-price cotton system if a choice must be made between the fixed price auction program or an export subsidy, the lesser of the

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two evils is the export subsidy. Selling of cotton by the USDA on an auction basis would make hedging impractical, while the subsidy plan would at least permit distribution of the cotton through an orthodox method.

Equitable Treatment Urged for U. S. Inventors. A spokesman for the National Association of Manufacturers charges that patents issued in the United States will be controlled to an abnormal extent by foreigners unless present prac-

tices are changed. He states that a foreign inventor is free to obtain patents in this country and own title to them without any obligation to the U. S. Government, and demands that American inventors be given equal latitude in developing their patent position. About one-sixth of present patents pending were applied for by foreign nationals.

Cotton Goods Production Up. Cotton broad woven fabric production in the fourth quarter of 1955 was 10 per cent above the third quarter of 1955, and 5 per cent higher than the fourth quarter of 1954, according to figures released by the Bureau of the Census.

Two Pile Heights in UK Artificial Fur. Two researchers at Leeds University, England, are re-

ported to have developed an artificial fur with two heights of pile, simulating the outer and inner coats of hair on an animal.

Scholarships Overstressed? In an address at the Textile Research Institute's 26th annual meeting, Sydney M. Cone, Jr., vice-president of Cone Mills Corp., noted that scholarships to textile schools are being overstressed to the point where the students make more than the teachers. Mr. Cone suggested that it is time more attention was paid to the teachers.

Silk Price to Be Stable. The Raw Silk Bureau (Japan) has pledged that floor and ceiling prices for raw silk will remain unchanged for another year.

NBTI to Expand Facilities. Trustees of New Bedford Textile Institute have approved an outlay of nearly $1½ million to be spent during the next three years for capital improvements at the school.

U. S. Cotton Policy Disrupts Foreign Futures Markets. Lack of a realistic, consistent cotton policy by the United States and the ever-present possibility of this country's dumping huge surpluses on the world market makes it impossible for foreign spinners to hedge their

purchases of raw cotton satisfactorily, reiterates Marcel Fremaux, president of the International Federation of Cotton and Allied Textile Industries. The Federation emphasizes that increased consumption, and not curtailed production, is the answer to the problem of surpluses.

"Locality" Suit Pushed Despite Minimum Wage Hike. The textile mills involved in a suit challenging the Labor Department's interpretation of the word "locality" to mean the whole United States in fixing minimum wages under the Walsh-Healey Act will continue to press their suit to the Supreme Court, despite the new $1 minimum wage. Although the new minimum might seem to make the suit academic, the mills feel that the principle of "no wage fixing by administrative edict" is still at stake and must be settled.

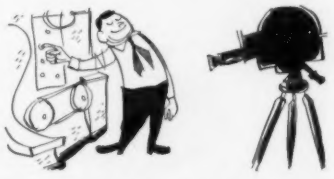
Device Speeds Knitting Needle Cleaning. "Nadel-Fix," a device for

News in Brief

use in cleaning the needles and needle beds of flat knitting machines, has been introduced by Erich Rockelmann, Eschwege, West Germany. The device is claimed to permit the lifting out of a whole set of needles at once, and reinsertion after cleaning, without the danger of disarranging the needles. It also is said to facilitate the quick readjustment of high-foot and low-foot needle machines to another set of needles.

Tufted Rayon Carpet "Spectacular." The growth of tufted rayon carpets is probably the most spectacular recent development in U. S. textiles, said Graeme G. Whytlaw of American Viscose Corp., addressing the annual meeting of the Canadian Association of Textile Chemists and Colourists. Points to watch in using rayon for carpets were listed as proper blending, proper aging of yarn, careful control of size and twist of yarns, avoidance of wet winding or steaming, careful selection of dyestuffs, the pH of the rinsed carpet, and final drying temperature control.

Work Simplification Films Available. The Industrial Management Society has made available for general industry use on a



rental basis a series of 38 films on work simplification in plant and office operations. A list of available films may be obtained from the Society, at 35 East Wacker Drive, Chicago 1, Ill.

NAWM Asks Increased Wool Goods Tariff. The National Association of Wool Manufacturers, in testimony before the Committee for Reciprocity Information, has asked that the ad valorem duty on woven wool fabrics be increased to

Rock Hill Printing & Finishing Co., Rock Hill, S. C.

From the standpoint of yardage in finished and printed goods, the largest plant in this country. It is a typical representative of mass production at low cost as best exemplified in American Industry.

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Bishopville Finishing Company, Bishopville, South Carolina
(Division of Reeves Brothers Company)

New rayon finishing plant to handle the product of Reeves Brothers Company Mills in the South.

45 per cent. The rate was cut to its present 25 per cent in 1947.

Machinery-Labor Cost Ratio Down. The cost of machinery and equipment to American industry relative to the average cost of an hour's labor has been reduced since 1941 by almost one-third, reports the Machinery & Allied Products Institute.

Where Synthetic Fibers Need Research. Areas in which the man-made fibers fall short and where further research is needed were outlined by Herman D. Ruhm, Jr., president of Burlington Industries, speaking at the recent annual meeting of the Textile Research Institute: problems of dyeability, sensitivity of rayon to moisture, low strength of acetate yarns, sensitivity to static, pilling, and lack of comfort.

Why Do Textile Grads Leave Industry? National Council on Textile Education proposes a survey to find out why textile school graduates don't remain in textiles. The

survey would try to find answers to such questions as: What are the textile schools doing today? What are they trying to do? Where are textile school graduates going? Why don't more go into mill production jobs? The proposed survey would be financed by the industry, at an estimated cost of about $25,000. [More on this subject on page 121.]

News in Brief

Japan to Make American Acrylic. American Cyanamid Co. has licensed Sumitomo Chemical Co., Osaka, Japan, to produce Creslan, Cyanamid's acrylic fiber. In Japan, the fiber will be given another name.

USDA Sets Cotton Price Support Levels. Minimum price support level for 1956-crop upland cotton, basis Middling ⅞-inch, will be 28.85 cents per pound, gross weight, at average location [this will make the support price for Middling 1-inch about 32¼ cents]. The price of extra long staple will

MERCHANDISING NOTES

Aldon Rug Mills have developed the Aldon Rug Refinisher, a mechanical beater to restore and improve the texture of rayon and cotton carpets. It will be manufactured by Moore Time Saving Equipment, Inc.

American Enka Corp. has contracted for a series of one-minute color films on behalf of its Jetspun rayon seat cover yarns, to be shown at drive-in theaters from coast to coast.

Arndt, Preston, Chapin, Lamb & Keen, advertising agency, list towels and sheets as the textile items among 33 consumer products of which 9 out of 10 people are able to name one or more specific brands.

Bannerized Corp. of America has introduced a process for producing machine washable wool sweaters, with other desirable characteristics.

Berry Brothers Corp. has obtained tentative FTC approval of its request that irregular socks packed in its patented "Berrypak" need have only the outer sock stamped "irregular." FTC regulations usually require that both socks be so stamped, to prevent unscrupulous dealers from converting half their stocks of irregulars to first by a simple switch.

William Carter Co. will accentuate prints in its fall and winter promotion of infants' and children's sleepers.

Coats & Clark is making available a fine light weight crochet wool for art needlework buyers.

Du Pont Co. has appointed managers of advertising and promotion for each of its four end-use merchandising categories: men's wear; women's wear; home furnishings; and industrial, general, and export.

General Plastics Corp. has been appointed distributor for Du Pont's Armalon tetrafluoroethylene (Teflon) coated glass fabric.

B. F. Goodrich Co. is using Dacron as the filling in jackets for a new lightweight fire hose.

A. & M. Karagheusian, Inc.'s president, Steele L. Winterer, says that the chief opportunity for increased carpet sales lies in "inducing consumers to retire millions of carpets and rugs now in advanced stage of senility."

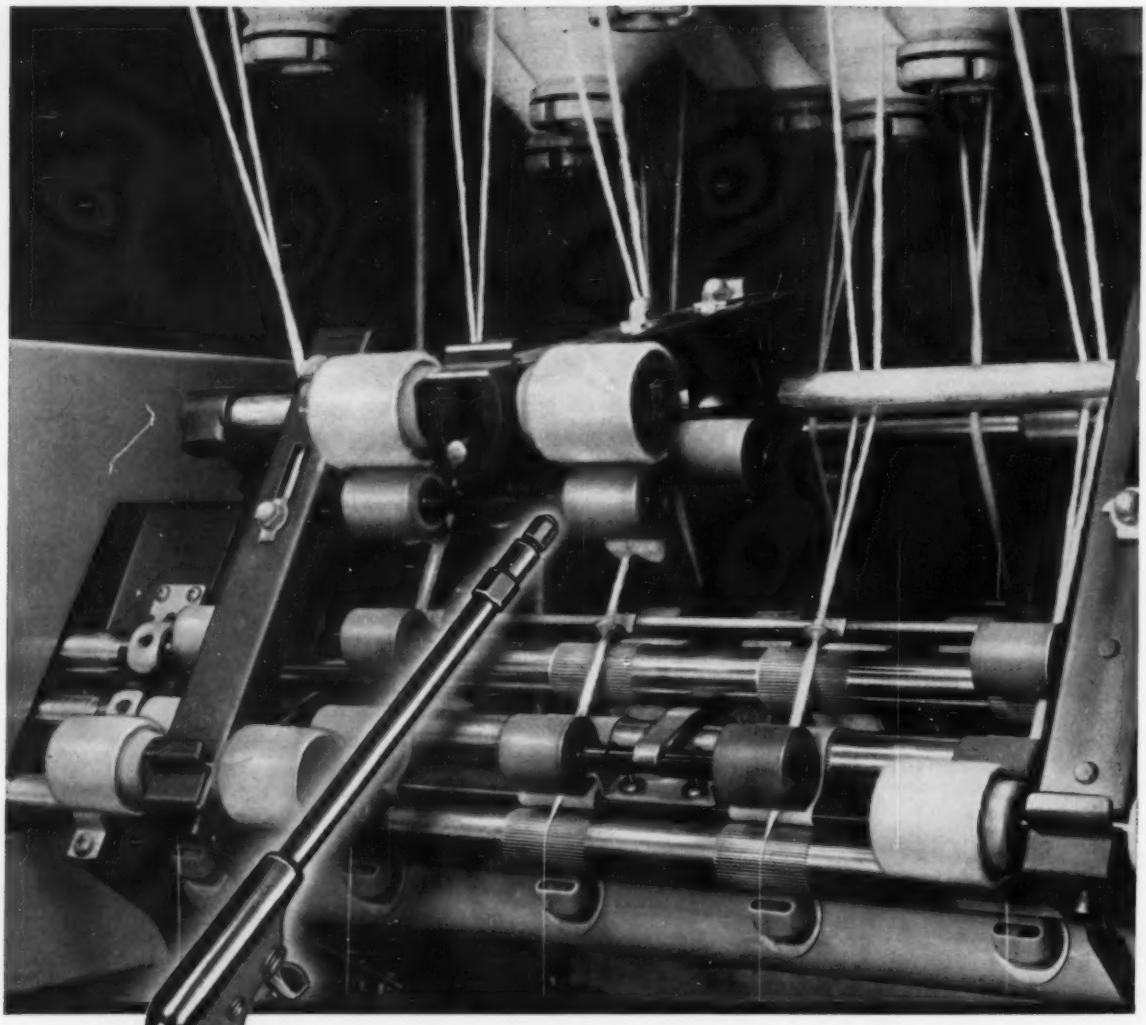
Frank H. Lee Co. includes hats made of dynel, wood fibers, wheat straw, coconut, buri fiber, raffia, and rice paper in its summer line.

M. Lowenstein & Sons have introduced a denim with a cotton warp and solution dyed rayon filling.

Madden Mills' president, John Madden, suggests that more mills could share in the profitable retail piece goods market by selling through jobbers, thus bypassing the problem of selling small lots to large numbers of retailers.

National Cotton Council has published a new sales training booklet, "Why Cotton," replacing the Council's popular "Discovering Cotton" as a basic source of information about the inherent qualities of cotton.

Wool Bureau reports that the U. S. wool growing industry was spotlighted on television recently for the first time when the TV cameras of NBC's "Wide, Wide World" program visited a sheep ranch near Fresno, Calif.



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Sinclair NO-DRIP Numbers 8, 12, 15 and 17 can save you money through smooth operation and low maintenance costs. Call your Sinclair Representative today, or write for the new NO-DRIP pamphlet to Sinclair Refining Company, Technical Service Division, 600 Fifth Avenue, New York 20, N. Y. *There's no obligation.*

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be supported at 55.65 cents per pound, net weight.

Raps Commerce Department. Roger Milliken, president of Deering, Milliken & Co., Inc., has charged the U. S. Department of Commerce of joining the "Department of State in what can only be interpreted as a concerted effort to sell out the great American textile industry." He said he wired the Secretary of Commerce to this effect. In a sharply worded statement, Mr. Milliken said, "We have the spectacle of a U. S. trade mission, sponsored by the Department of Commerce, advising the Japanese on how they best can step up their already damaging shipments of textiles and apparel to this market. . . . . It is high time that the Secretary of Commerce put his Department squarely on the side of all American industry and labor by repudiating and recalling the trade missions to Japan and any similar missions which may be roaming the world."

Research Must Be Promoted. All researchers must sell research in the practical language of industry, whether or not that is their specific job, Malcolm E. Campbell, dean of the School of Textiles, N. C. State College, told those in attendance at the Textile Research Institute's 26th annual meeting.

Council Offers Palliative for Cotton's Ills. A nine-point program for alleviating the "most critical situation ever faced by the cotton industry" was proposed recently by the National Cotton Council in

testimony before the House Agricultural Committee. Points proposed include: 1. Incentive payments to farmers who reduce cotton acreage. 2. Recognition of technological improvements in cotton production in the price support system. 3. Shifting parity basis from 7/8-inch Middling to average grade and staple of the crop. 4. Increase in federal and state funds for research. 5. Labeling of textile products. 6. No substitution of poundage quotas for acreage quotas. 7. No dollar limitation on price support loans. 8. "Reasonable" limits on textile imports. 9. Sale of cotton for export at competitive prices [this is now being done].

European Technical Digests. Selected articles from over a thousand European technical and industrial journals are now available monthly to American industry in translated and digested form through *Technical Digests*, a publication of the Office of Technical Services, U. S. Department of Commerce. The magazine covers 16 industrial classifications, including textiles.

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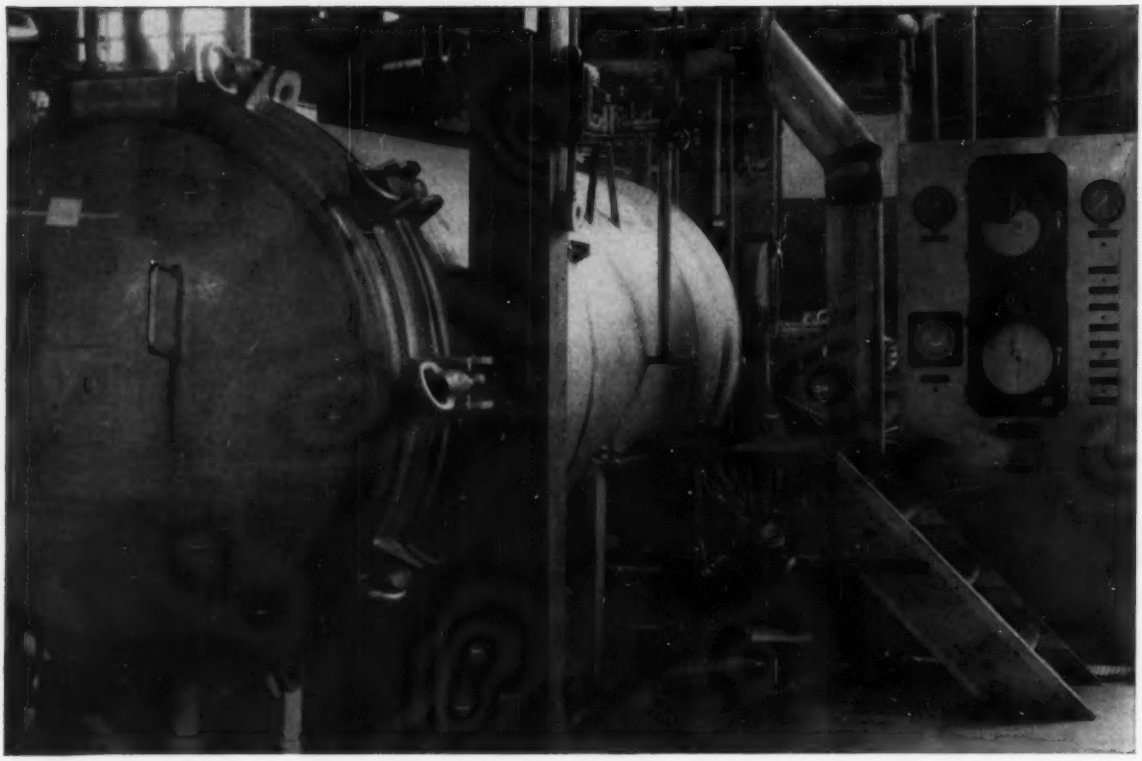
with this new Taylor controlled Burlington Hy-Press Dye Machine



THE Palatine Dyeing Company, at St. Johnsville, N. Y., believes in using the most modern equipment—and in the virtues of automation. In fact, all of their dyeing equipment is Taylor controlled. Pictured above is one of Burlington Engineering Company's latest machines, equipped with a Taylor FULFLEX* Time Schedule Controller. This instrument automatically regulates rate of rise, hold time and temperature, according to a pre-determined schedule. Pressure gages on either side of the controller indicate inside-out and outside-in pressures.

This Taylor control system—

- **Assures a uniformly dyed product**
- **Cuts operating costs**
- **Eliminates the hazards of manual operation**

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Whether you use beam, piece, skein, package or top dyeing, there's a Taylor control system specifically designed for your needs. Just call your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

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IN HOME AND INDUSTRY

Using Salt Efficiently

by **INTERNATIONAL SALT COMPANY, INC.**—America's largest producer of salt

How to Sample Rock Salt for Screen or Chemical Analysis

Sampling bulk rock salt accurately is often a difficult problem. For when salt is stored in piles, coarser particles collect at the foot of the pile—while finer particles remain inside and at the top. A few handfuls of salt taken at random from the outside and bottom of such a pile almost always mean an inaccurate sample for analysis. Also, during transportation and handling, salt particles of different sizes tend to become segregated.

However, by following a few simple steps, you can easily obtain salt particles of a truly representative size range. This sample will then give accurate results in any type of screen or chemical analysis. Here are the modern sampling techniques approved for most plants where salt is used:

Stockpile sampling of bulk salt. Samples from either indoor or outdoor stockpiles should be taken at three separate points: at the top of the pile, at the base, and at one intermediate point. The sample taken at the intermediate point must come from deep within the pile. To prevent segregation of salt particles during this sampling procedure, a board should be pushed into the salt pile just above the point from which the sample is taken.

Sampling bulk salt in railroad cars or trucks. In sampling a boxcar load of salt, three trenches should first be made in the salt across the width of the car. The bottom of each trench should be at least 1 ft. below the surface of the salt, and approximately 1 ft. wide. Equal portions of salt can then be taken from nine equally spaced points along the bottom of each trench. Two of the nine points should be directly against the sides of the boxcar. Sampling in these trenches is best accomplished by pushing a shovel or sampling tube directly into the salt, and not by scraping horizontally.

The same general procedure may be used effectively to sample truckloads of rock salt.

Sampling between transport and storage. Rather than sample bulk salt in cars or in storage, many companies feel that more accurate samples can be taken during unloading—at some point in the handling process where a flowing stream of salt is accessible on all sides. The points at which salt leaves a head pulley or drops from a chute lip are two of the most desirable places for this type of sampling.

This "running sample" gives consistently excellent results, but it must meet the following conditions as closely as possible:

1. To obtain salt particles of all sizes, the sampling scoop must move at uniform rate across the entire *width* of the stream. Samples will generally be inaccurate if the scoop moves through the stream from front to rear.

2. The sampling interval should be uniform. And it is better to take small samples frequently than a few large samples.

3. The sampling scoop should have a relatively long rectangular opening, permitting a knife-like cut across the stream. The use of pails or shovels to sample the stream may produce an inaccurate sample.

4. Sampling should take place on a regular stream flow. When taken from an intermittent flow, samples may not be representative. Also, sampling should be carried on throughout the entire unloading period.

Moisture content. Samples should not be taken from bulk rock salt which has recently been exposed to rainfall or excessive humidity. Under these conditions, the proportion of insolubles will increase due to the leaching out of a certain amount of salt. Resulting analysis will then show a higher degree of impurities and a lower sodium chloride content than is normally present.

Finally, it must be remembered that no matter where the salt is sampled—the larger the sample taken, the more representative it will be for final analysis. In fact, many industries require a gross sample of at least 100 lb. from one carload of salt. This sample is then reduced to about 5 lb. for laboratory work.

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Through skilled and experienced "Salt Specialists," International can help you get greater efficiency and economy from the salt you use. International produces both Sterling Evaporated and Sterling Rock Salt in all grades for industry. And we also make automatic dissolvers in metal or plastic for both types of salt. So we have no reason to recommend one type of salt over another; we simply recommend the type and size of salt most perfectly suited to your needs.

If you'd like the assistance of an International "Salt Specialist" on any problem concerning salt or brine—or further information on salt sampling and analysis—just contact your nearest International sales office.

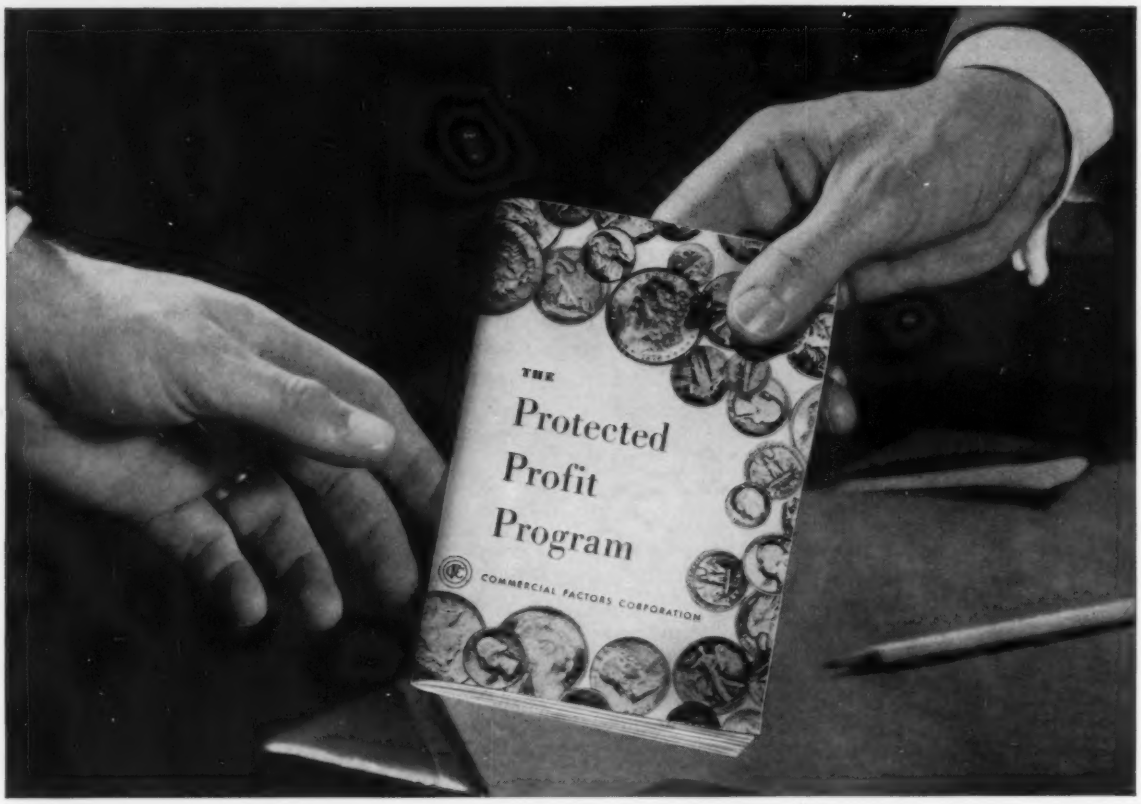
International Salt Co., Scranton, Pa.

Sales Offices: Atlanta, Ga.; Chicago, Ill.; New Orleans, La.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; St. Louis, Mo.; Newark, N.J.; Buffalo, N.Y.; New York, N.Y.; Cincinnati, O.; Cleveland, O.; Philadelphia, Pa.; Pittsburgh, Pa.; and Richmond, Va.

Sampling Tube Is the Simplest Method

Most sizes of rock salt can be sampled from stockpile, bins, trucks, or railroad cars by means of a simple sampling tube approximately 1¼" in diameter and about 6 ft. long. Five to eight insertions of this tube into the salt will furnish a sample of about 10 lb. Some of the best tubes for sampling rock salt are those sold for testing grain. They have about 12 openings and a special auger point.

FOR INDUSTRY, FARM, AND THE HOME—
STERLING SALT
PRODUCT OF INTERNATIONAL SALT CO., INC.



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This is what the "Protected Profit Program" will do for you.

1. Through this program you will always have cash available as you need it. You will be able to expand your business safely, comfortably and rapidly, without adding one cent to your investment.

2. You will never again be concerned about slow collections, poor credit risks or bad debts. This will allow you to sell to a broader segment of the market.

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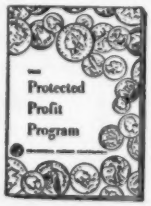

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AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Our Old Friend, Tar Spots

YOU MAY mark it off to stupidity, the lack of the ability to read, or to almost anything else, but we must admit that until about eight or ten years ago we had never heard of tar spots. True, we had occasionally seen tar spots tracked into an otherwise clean house by a small boy who had walked barefooted on a too-hot asphalt street, but honesty compels us to admit that this was about the limit of our knowledge concerning the subject

In the past decade, however, the tar spot problem has occupied about as much space in the textile trade press as Grace Kelly's wedding in the tabloid press. Washington agencies have studied the problem. Large national associations in the textile field have studied the problem. Mill laboratory technicians have studied it. And, presumably, buyers for the garment industry have studied it.

You would think that with all this scholastic activity the problem would have been solved long ago, but such is not the case. Frankly, we must admit that we are occasionally suspicious that the tar spot problem is more prevalent when grey goods prices are falling than when the opposite is true. We have been suspicious that when the price of 80 squares drops to 20¢ the buyer who has contracted for 50,000 yards for forward delivery at 21¢ is much more critical of the cloth delivered to him. Nevertheless, you cannot blame a purchaser who objects to having tar delivered to him when he has paid for cotton.

Numerous Causes Suggested. We have heard numerous causes advanced for the presence of tar in cotton goods. One very plausible explanation is that many of the box cars provided by the railroads for the shipment of raw cotton are contaminated and when the bales shift in transit the sticky substance comes off on the lint. This might explain the presence of tar on bales adjacent to the sides of the box cars, or on the sides of bales which are on the floor of the car, but this does not seem to us to be a fully satisfactory answer.

Other ideas which have been projected are that the contamination comes from tar-coated roofs of storage warehouses, dripping down through the planks in hot weather. Another source that has been noted is drippage from certain types of fluorescent lights used in textile mills. Others were that trucks which haul the raw cotton from the field to the gin are throwing asphalt up from the paved roads as they move along, while one of the most fantastic was that small planes used in spraying cotton fields were dropping tar from their wheels and this was landing on the cotton boll.

To our way of thinking, perhaps the most plausible reason advanced thus far has to do with asphalt-coated pick sacks which are used in some parts of the cotton belt. These are very long sacks, some 12 feet long, usually made from jute, and frequently coated with an asphalt substance to prolong the life of the bottom of the bag which is dragged along the ground between the rows of cotton.

Proponents of this theory argue that when these bags are thrown into the wagons, or trucks, which are used to take cotton to the gin, that some of the tar flakes off the bottoms of the sacks and becomes thoroughly distributed during the process of ginning. We have seen some of these sacks and, from what we know about the situation, we are inclined to lean toward the thought that this is one of the major sources of tar or asphalt contamination.

Fortunately, several programs are now under way which may one day bring an end to a problem which has been as elusive as it has been difficult of solution. The United States Department of Agriculture is now conducting a large-scale survey of some hundreds of textile mills in an effort to determine the extent of monetary loss or damage being caused by tar spots. As the Department already knows, not all of the loss is confined to the rejection of damaged goods, because a considerable portion must be attributed to the labor necessary to clean the outsides of bales before they go into the opening room hoppers.

USDA has circularized all the cotton mills in the country with a relatively simple one-page questionnaire and, on the basis of replies to this, will then initiate on-the-spot cost studies in certain mills. These surveys are not expected to solve the problem, but it is hoped that they will at least determine its size.

The National Cotton Council has been working on the question for a number of years, with education being its principal weapon. The Council has been working with the railroads in an effort to make certain that the box cars which are delivered for cotton shipments are free of tar and asphalt. Additionally, it has been working with the American Cotton Manufacturers Institute in an educational cam-

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paign, directed mainly at cotton farmers in Arkansas, Tennessee, Alabama, Missouri, Mississippi, Louisiana, and Texas.

The subject for this campaign is that asphalt-coated pick sacks are causing a part of the tar spot problem at the textile mill level and that anything which makes it difficult for a textile mill to sell cotton goods is detrimental to the cotton farmer. The program is directed at these particular states because it has been determined that this is the geographical area in which asphalt-coated pick sacks are most commonly used.

A. K. Winget, former president of ACMI, recently directed a letter to the heads of the principal farm organizations in these states, calling their attention to the damage cotton was sustaining because of the tar spot problem, and this letter has been widely reproduced in Farm Bureau papers and other producer publications.

With these various programs under way, all of us can hope that the solution to this vexing dilemma is not too far off. It is realized that mills operating on such fabrics as denims, as well as other types of coarse goods, have not been troubled by it; but many other plants, both the weaving mills and bleacheries, have found it to be an especially tough one to solve.

All the News

A few months ago we took the venerable *The New York Times* to task for what we thought was a particularly unfair editorial blast directed at the "selfish interests" in the textile industry who were urging an import quota on Japanese textiles. Frankly, there is some doubt in our minds that this shook the ivory tower in which *Times* editorials are prepared, but we did get it off our chests, for better or for worse.

Now, however, we must say a word of commendation for this same newspaper, because in an exceptionally well prepared article by staff writer Glenn Fowler the *Times* has pointed out that the cotton textile industry faces the twin specters of competition from Japan, as well as competition from paper and other textile fibers. The textile industry, says the story, has not been faring well in recent years with abnormally low earnings and with sales which have not kept up with the national trend.

Lest we forget the Old Lady of Wall Street, we should also mention that *The Wall Street Journal*, in a detailed analysis by Thomas E. McCarthy, comes to somewhat the same conclusion—to wit, that things are not going very well in the textile industry.

It is our feeling that both articles have done much toward bringing before the public some of the true facts about the textile industry. Only through a recognition of our difficulties can we hope to find solutions.

Date	Event	Location
May 31-June 2	Tufted Textile Manufacturers Association convention	The Fontainbleau Miami Beach, Fla.
May 31-June 2	South Carolina Textile Manufacturers Association convention	The Cloister Sea Island, Ga.
June 5-7	Textile Seminar, sponsored by Textile Technical Federation of Canada	Queens University Kingston, Ontario
8-9	Piedmont Section AATCC annual outing	Mayview Manor Blowing Rock, N. C.
8-9	Southeastern Section AATCC annual outing	Radium Springs Albany, Ga.
14-16	National Association of Hosiery Manufacturers annual meeting; also Hosiery Industry Conference	Hotel Roanoke Roanoke, Va.
15	Rhode Island Section AATCC annual outing	Pawtucket Country Club Pawtucket, R. I.
16	Midwest Section AATCC annual outing	Brown's Lake Resort Burlington, Wis.
17-20	ASTM Annual Meet and Apparatus Exhibit	Chalfonte-Haddon Hall Atlantic City, N. J.
21-23	Southern Textile Association annual convention	Mayview Manor Blowing Rock, N. C.
21-23	South Central Section AATCC annual outing	Lookout Mountain Hotel Chattanooga, Tenn.
Sept. 6-7	The Fiber Society, Inc.	The Warwick Hotel New York City
10-15	Perkin Centennial	Waldorf-Astoria New York City
13-15	American Association of Textile Chemists and Colorists annual convention	Waldorf-Astoria New York City
27-28	Combed Yarn Spinners Association convention	Cavalier Hotel Virginia Beach, Va.
27-28	Northern Textile Association and National Association of Cotton Manufacturers annual meeting	Wentworth By-The-Sea Portsmouth, N. H.
28	Northern New England Section AATCC annual outing	Waschusett Country Club West Boylston, Mass.
28	Philadelphia Section AATCC	Abraham Lincoln Hotel Reading, Pa.
Oct. 1-5	Southern Textile Exposition	Textile Hall Greenville, S. C.
10-12	North Carolina Textile Manufacturers Association annual meeting	The Carolina Pinehurst, N. C.
13	Georgia Slashing, Weaving, and Maintenance Discussion (TOE)	Georgia Tech Atlanta, Ga.
16-19	ASTM Committee D-13 on Textiles.	The Warwick Hotel New York City
17-27	International Knitting Machinery & Accessories Exhibition	Granby Halls Leicester, England
18-19	Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
22-26	44th National Safety Congress and Exposition	Conrad Hilton Chicago, Ill.
27	Alabama Textile Operating Executives fall meeting	Thach Auditorium Auburn, Ala.
Nov. 27-30	National Chemical Exposition	Public Auditorium Cleveland, Ohio

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BREAKER DRAWING is run with eight ends up. Minimum doublings elsewhere places burden of uniformity on drawing, which must be a precise operation.

FLUFFY CONDITION OF ORLON STOCK cuts can capacity to only nine pounds in a 12" x 36" can (compared to 16-18 pounds of cotton).

Drawing Is the Key to Processing High Bulk Orlon, Rhyne-Houser Management Finds

STAFF PREPARED
EXCLUSIVE

RHYNE-HOUSER Mfg. Co., Plant No. 2, Cherryville, N. C., produces 21,000 pounds of high quality "Orlon"* knitting yarns each week. This production is achieved on 6420 spindles and 30 deliveries of drawing, running 14s to 28s Orlon from 1½-inch staple in high bulk yarn. Management at this plant considers drawing the key to good yarns and production, after extensive experience with Orlon since 1953.

Rhyne-Houser does no doubling at speeders, and only one process is employed at that point. Although roving is double creeled at spinning, drawing is the primary evening process; therefore, emphasis is placed on a precise operation in this department.

Here are some current observations on high bulk Orlon yarn production at Rhyne-Houser No. 2.:

The mix is made of high shrinkage Orlon blended with regular staple Orlon in suitable proportions for knitting yarns, although some weaving yarns are made here for the blanket trades. The blended stock has certain characteristics requiring special attention in processing on the cotton machinery in this mill.

Special care must be exercised in blending to assure an even blend which will prevent tight streaks in finished goods made from the yarn. The same percentage of high shrinkage fibers must be maintained with a fixed percentage of regular staple. Every precaution is necessary in view of the fact that high bulk appearance is secured upon immersing the fabric in a hot bath. Of course, at this point if streaks show up, it's too late.

Static. There is more tendency for static generation in high bulk yarn components than in all regular staple. The high bulk blend must be processed under close temperature and humidity control. Rhyne-Houser runs 85-90 F at 50-55 per cent relative humidity.

Drawing Changes. Upon securing a good blend, the key consideration is drawing, where some changes are necessary. It is desirable to have large tube gears with considerable dwell to accommodate the large-diameter sliver, which is much greater for its weight than cotton. In other words, the Orlon sliver should practically fall into the can from the calender roll.

Because of the fluffy condition of the sliver, the ratio between can table and coiler head was changed to increase speed of the can table 15 per cent. Faster can table takes sliver away from the coiler head quickly to prevent the fibers from jamming in the tube gear.

Fluffy condition of stock cuts can capacity to only nine pounds in a 12" x 36" can (compared to 16-18 pounds of cotton).

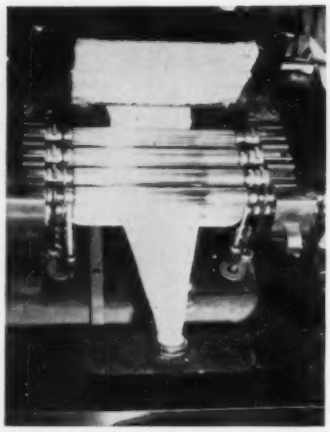
Roll settings are about ⅛ inch over staple length, and roll speeds are 640 rpm on front roll, amounting to 268.8 fpm. Breaker drawing is run with eight ends up. Finisher drawing is run with six ends up at 610 rpm at front roll, amounting to 256 fpm.

Cleanliness. Orlon has an affinity for grease and oil. Consequently, every precaution must be observed to prevent fiber contact with lubricants. This mill circum-

*Du Pont trade-mark.

vented the danger of lubricant-contaminated stock by using Ideal drawing changeovers, incorporating ball bearings throughout. No oiling or greasing is necessary on the drawing, which was chosen for the job for this reason as well as for high production speeds.

This drawing runs approximately twice as fast as the old drawing (before changeover) and with the same level of NU. In this instance NU is about 16 per cent, which is considered good for this type of work. The changeover drawing runs much quieter, a feature attributed by mill superintendent John Wilson to anti-friction bearings throughout, and fiber coiler gears; there are no steel-on-steel gears.



DANGER OF CONTAMINATED STOCK was obviated by using drafting assemblies which require no oiling or greasing.

1955 Output of Broad Woven Goods 5.5% More than 1954's

BROAD woven fabric output in 1955 totaled 12,972,000,000 linear yards of cotton, woolen and worsted, man-made fiber, and silk goods—an increase of 5½% over the previous year's production, according to the Textile Economics Bureau.

All major groups of fabrics showed increases during 1955 and these ranged from 3% in cotton fabrics to 14½% in man-made fiber fabrics. Within the cotton broad woven goods category, the output of most types of fabrics was higher than in 1954 with the exception of slight declines in napped, colored, and print cloth fabrics. Woolen and worsted fabric production in 1955 increased 12% over the previous year, due mainly to a greater output of civilian apparel fabrics.

Most man-made fiber fabrics during 1955 showed increases over the previous year, the largest percentage gain occurring in fabrics made of man-made fibers other than nylon or cellulosics—notably, polyester fiber fabrics and glass fiber fabrics. Rayon and acetate fabrics, however, increased by 13½% over 1954 to the latest figure of 1,882,000,000 linear yards; and production of 100% nylon fabrics continued their steady increase during 1955, rising 6½% over 1954 to reach a total of 373,000,000 yards.

Output of tire cord and fabric during 1955 totalled 523,000,000 pounds, 26½% above the 1954 figure of 414,000,000 pounds. The Bureau notes that the major factor in this rise was the increased output of rayon tire cord and fabric which went up 25½% over the 1954 level to reach a total of 406,000,000 pounds. Output of nylon tire cord and fabric increased from 30,000,000 pounds in 1954 to 50,000,000 pounds last year.

Broad woven goods exports in 1955 amounted to 198,781,000 square yards, only 1% under the 1954 figure. In spite of the lower total, a strong showing was made in exports of woven man-made fiber fabrics other than rayon and acetate.

Look at the

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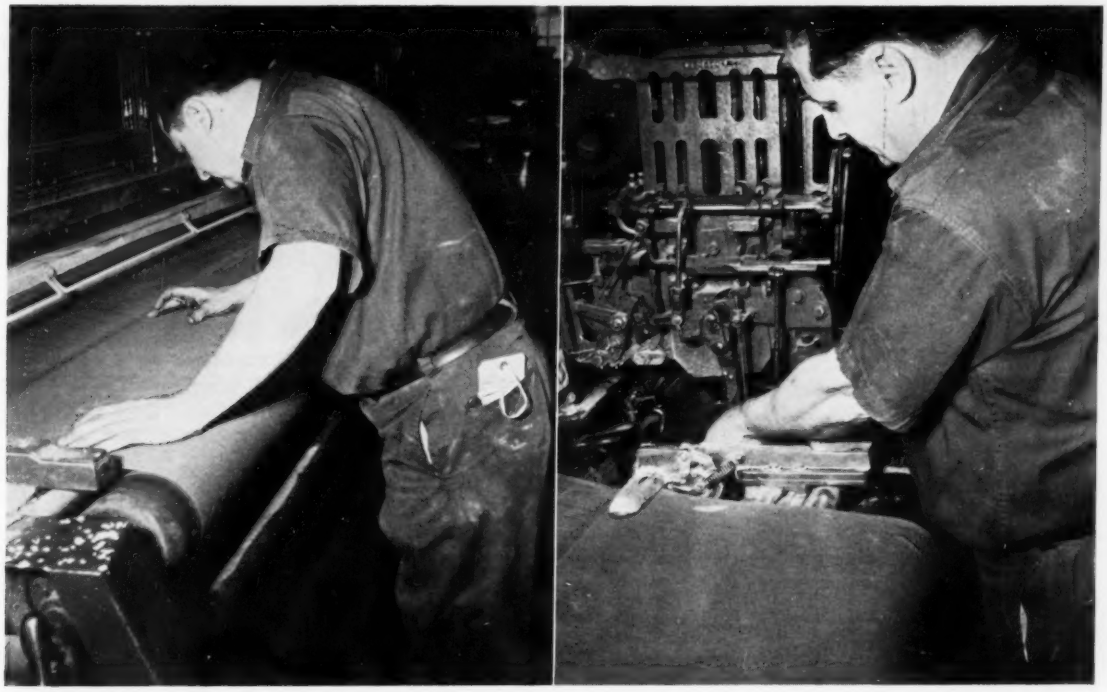
WHEN CONSIDERING the manufacture of men's wear and women's wear worsted cloth, it is well to recognize that there are two mill approaches. The first is directed to volume production of this goods. While quality control in mills making this class of merchandise is, because of the large size of the mills, usually more comprehensive as regards systems and facilities, a different set of values exists than in a second type of manufacturing which includes the so-called "quality" worsteds. In this sense, quality refers more to weaving high sley and pickages in multi-colored, yarn dyed effects than it does to the scientific techniques required for weaving with freedom from defects.

The material with which this article is concerned covers the second category of mill. The approach and techniques peculiar to weaving properly these fine worsteds were drawn from the experience of a prominent, integrated, New England worsted mill.

All of the techniques employed for properly weaving quality worsteds have one thing in common—an emphasis on the individual and individual attention. This is so because of the increased share of the per yard cost attributable to direct labor. The mill used as an example in this article estimates a rise in their labor portion of costs from about 30 per cent in prewar days to about 65 per cent today. Individual attention follows because more handling and care are required for cloths bearing high thread counts and/or "novelty" effects than are required for staples.

Speed. In discussions of loom speeds, it might be well to point out that this mill figures men's wear gabardines as the keystone of its production. Looms in the 120-unit weave shed include W-3s and W-1s and are treated alike as to

Steps One Mill Takes to Assure Weaving of Quality Worsteds



THE INSPECTOR makes two or three tours of the weave room each shift, checking each loom for weaving defects (left), and cleaning and checking working order of tail cutters (right).

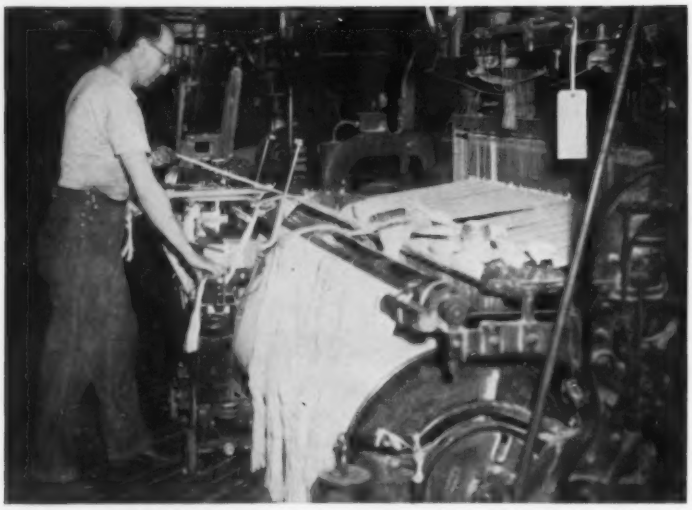
speed. All looms are run at 110 picks per minute. This might generally be considered to be a slow speed, but because of the nature of the goods involved, and the fixed overhead expenses, it represents a balance required to justify the overhead and to produce acceptable merchandise.

One specific influence concerns the nature of the wool fiber. The tenaciousness of the scale-covered wool fiber presents a problem in opening a shed too many times per minute. Although elastic, these yarns, and consequently fabric components, are subject to more "wear and tear" at elevated speeds.

Another important weave room condition running hand in hand with speed, relative humidity, has been found to be best controlled at 70 per cent at 80 F. Levels of 65 per cent and below have been found to be detrimental to quality.

CENTER FORK WELLS are also checked and cleaned by inspector.

Work Load. The general average work load assignment for the quality worsteds is 18 looms per weaver. Fixers tend 36 looms, as



CLEANING is not so critical in this work that it must be done after every shift. When machine twisting (shown here) is done to enter a fresh warp of the same style, slight loom cleaning is in order. Between styles loom is thoroughly cleaned.

LUBRICATION is performed by one man for routine work. Major bearings and crank shafts are oiled daily, picker balls twice a day, all others twice a week. Looms equipped with one shot systems are given one stroke per shift.

do bobbin girls. In the case of unusually high pickages the loom load is reduced to 12 per weaver.

Most important in the consideration of work loads is the type of work in a loom set rather than the number of looms. Management takes upon itself a study of the variety of styles being run and "spreading out" the tough ones, so that no one set of looms has too many of this type. Since fine gabs are difficult to weave, the mill makes sure that weaver's sets contain only a few tough styles, and they "sprinkle in" a few easy jobs to go with them.

The Inspector. Personal attention directed almost continuously to each loom in the department by the assistant overseer of weaving constitutes a somewhat unique characteristic of quality worsted weaving.

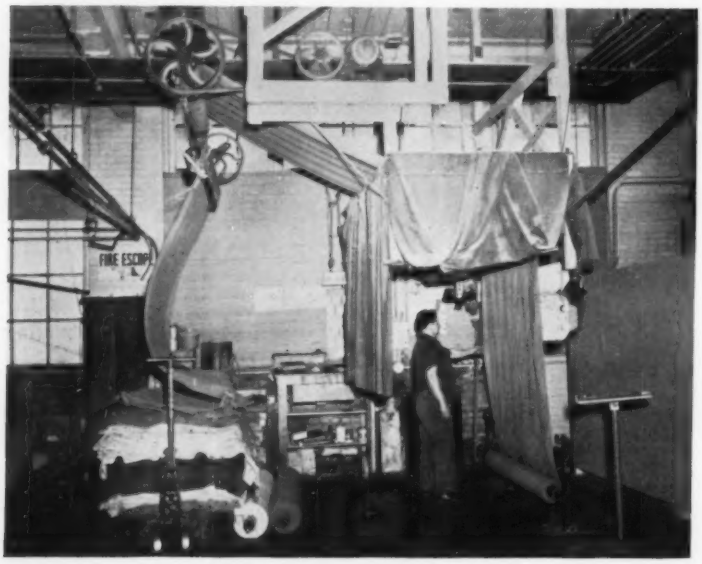
His first function is to inspect goods personally on the weave room perch as fast as the pieces are cut from the looms. This is usually done so that no big backlog of goods piles up. In this way, loom, warp, or filling troubles can be reported without delay.

More effective from the standpoint of preventive maintenance than perching, however, is the loom to loom tour that the inspector makes two or three times *each shift*. During these tours, made with the purpose of finding defects, the following points are checked at each loom:

1. Warp defects, such as wrong reed or wrong draw, weaving into the cloth.
2. Bad quill doffing. (He looks into can. If quills are completely empty or if contain more yarn than just a bunch, he calls for a fixer.)
3. Runners (3 or 4 ply filling where it shouldn't be more than 2 ply).
4. Correct adjustment and condition of harness straps.

In addition, the inspector cleans the center filling stop motion fork, and cleans and checks the tail cutters for correct operation. All of

GOODS ARE INSPECTED IN WEAVE ROOM. The inspector examines every piece of goods that comes off the looms, as soon afterwards as possible, on this perch located in the weave room.



these points are followed at the front of the loom with the loom stopped. Once a day a general visual check is made at the back of each loom.

The Fixer. Aside from being guided in special cases by the inspector, fixers perform as usual on a call basis by weavers and also check certain items on a tour basis. Shuttles are checked on this tour. Particularly important in weaving this class of goods is the avoidance of making mispicks. Weavers are attentive to just how the loom stops; so, if the stop is not "on a pick," the fixer is called.

Generally, this mill has found that the amount of fixing required is significantly decreased by running looms at 110 ppm instead of at speeds which might be 20 per cent higher.

The Weaver. Generally, weavers are considered to be at a stand of looms only to weave, and assignment of weaver duties is confined to that function. Sometimes, a set of looms works out so that the weaver has to "jump" a loom to get to another loom in his set. The mill feels that weavers are busy people.

Warps. Since preparation of warps has an important influence on the way things will go in the weave room, care has been taken to standardize procedures of slashing. Warps of 2/50s and 2/60s worsted count are sized heavily as these generally represent tightly woven constructions. Single warps of all counts are sized also. From 2/36s on down warps receive no sizing, and if a special case arises, the slasher room applies a light sizing only.

Cleanliness. Looms are not cleaned between shifts. Warp tying machines are used to replace a warp at the loom; and, between warp replacements of the same style, the loom is given a slight cleaning. After every two or three of such replacements, and at warp replacements where a different style is going in, the loom is given a thorough cleaning. Study of this situation over a number of years has shown the schedule is adequate. Compressed air is used for this cleaning.

The usual care is taken to prevent unscourable oil from dripping on cloth in the loom. If a stain is detected at the weave room perch, it is immediately covered with a detergent. Aisles around looms are swept between shifts.

Lubrication. Outside of picker rods (which are oiled by weavers each shift), routine lubrication is performed by one person designated to do the job. Some looms are equipped with a one-shot lubrication system and pumps are given one stroke per shift. The oil man also acts as loom cleaner and sweeper. In looms not so equipped, main bearings and crank shaft are oiled daily, picker balls are oiled twice a day, and all other points twice weekly.

North Carolina Commission Reports Possible Effect of Lower Tariffs on State's Textile Industry

ABOUT a year ago, when the danger of imports of cotton textiles from Japan and other low-wage countries to the American textile industry became more and more acute, North Carolina's Governor Luther H. Hodges appointed a commission to make a study of the possible effect of these imports on the textile industry of North Carolina and the thousands of people employed in mills of the state.

On this commission were: Hon. L. Y. Ballentine, Commissioner of Agriculture; Hon. Frank Crane, Commissioner of Labor, and William P. Saunders, Director of the North Carolina Department of Conservation and Development. Paul Kelly, research and statistics chief, North Carolina Department of Conservation and Development, was authorized to gather facts from all possible sources as to the effect of rising imports on the economy of North Carolina.

The result of the combined efforts of these gentlemen, all representing the State Government, is presented in a report entitled "North Carolina's Textile Industry and Reduced Japanese Tariffs, December, 1955," which was recently made public.

In releasing the report, Governor Hodges said, "It speaks for itself."

In the foreword it is stated emphatically, "The contention that 1955 tariff reduction on Japanese cotton textile products constitutes a serious threat to North Carolina's textile industry, as well as many other segments of our economy, appears to be amply supported by the data presented in this report."

The study reviews the tariff situation from the time reductions up to 50 per cent were made in tariff rates on cotton textiles at Geneva last June.

"Textiles, by almost all standards of measurement, constitute North Carolina's largest manufacturing industry," the commission reported. "They predominate in number of establishments, total employees, wages paid, value of products, and value added by manufacture.

"If apparel, a closely related industry, which is expanding at a rapid pace in the state, is added, the combined activities occupy a still more vital position in the State's economy.

"It is almost impossible to measure adequately the total contribution to the state's economy. Without the support which comes from this segment of the business life of the state, thousands of its citizens would be destitute and considerable part of its business structure would crumble. This income contributes directly and indirectly a considerable part of the income and agricultural, trade, and

services industries. State and local government rely upon taxes from textile firms and persons engaged therein for an important part of their operating expenses. Numerous manufacturing firms which are suppliers of textile plants could not remain in operation without these markets."

These condensed facts on the endangered textile industry of North Carolina are provided in the report:

Textile mills furnish more than half (52 per cent) of all manufacturing employment in the state, accounting for 227,800 out of a total of 440,000 jobs.

Salaries, wages, and proprietors' income from textiles accounted for between one-sixth and one-seventh of the total personal income of more than five billion dollars for all North Carolinians in 1954.

Of the total collections of the state's general fund, the textile industry in the fiscal year of 1952-53 paid directly or indirectly an estimated $25 million, or 14 per cent. In more prosperous years, the percentage was higher.

For the same fiscal year, the industry paid 21.3 per cent of the total corporate income tax and 29.7 per cent of total franchise tax collections.

Mill owners pay an estimated $5 million or more annually to local governments in property taxes in the state. This does not include taxes paid by employees.

North Carolina farmers received

This Materials Handling System Reduced Finishing Plant

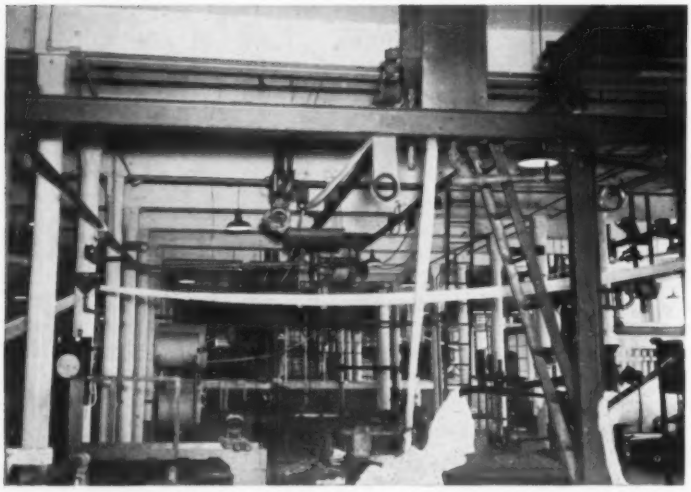
STAFF PREPARED

EXCLUSIVE

MATERIALS handling has been under study for a number of years at the Chicopee Falls, Mass., plant of Chicopee Manufacturing Corporation, and during the past two years the plant has activated a program based on the study.

The purpose of the installation was threefold:

1. To eliminate physical exertion due to lifting and moving heavy cloth rolls.
2. To increase available cloth



A STRAIGHT LINE movement continues down the 250' wet processing department. Kier bleaching and storage are done in this section. Feed and delivery of machines, guided by poteyes, are the only materials movers here.

GREY STORAGE is on second floor. The roll weights usually do not exceed 350 pounds.

DRYER DELIVERY (second floor) at end of department produces rolls up to 500 or 600 pounds. Note dolly truck positioned beneath roll in preparation for movement.

$82,532,000 cash from their cotton crop in the 1954-55 season—a per capita income of $179, or 24 per cent of the total per-capita cash farm income.

Major railroads in the state in 1954 moved 849,000 tons of cotton and textile products. Seven of the biggest truck lines report 26 per cent of their revenue came from textile products.

Following a study of the report of the North Carolina commission Dwight M. Wilhelm, executive vice-president of the Alabama Cotton Manufacturers Association, and T. M. Forbes, executive vice-president of the Cotton Manufacturers Association of Georgia, analyzed the effects of the tariff reduction on their own respective states.

Both warned that "unless prompt remedial steps are taken," Alabama and Georgia would be affected in very much the same manner as North Carolina. Specifically the sharply reduced tariffs on cotton textile imports from Japan to the United States would

1. Cut textile employment in their states severely and add to unemployment rolls;
2. Curtail production drastically;
3. Reduce over-all state income;
4. Tend to "dry-up" the economy of a number of counties in which textile manufacturing accounts for the bulk of employment;
5. Adversely affect numerous other businesses and industries interdependent on textiles.

Costs at Chicopee

Loading, unloading, and movement of piece goods within the plant can account for a big slice of the direct labor payroll. Also affected is the amount of floor space available. Here are the results of careful study and planning for materials handling.

roll storage space.

3. To provide better customer service.

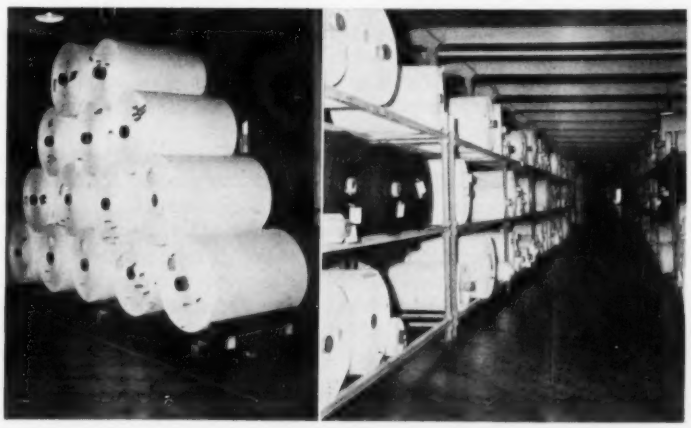
Current evaluations of the program, a product of the standards department, in comparison with systems used before its development provide a convincing testimonial on behalf of the effort involved. There have been no cases of strains or hernia suffered by plant personnel engaged in movement of goods, and an average of 50 per cent more storage space is now available without any increase of floor space. Probably one of the most influential factors in its development was the common mill situation of lost time due to difficulty of personnel to locate a particular roll of goods stacked in multiple layers, roll on roll, and the "bull work" required to get to those rolls in the lower layers.

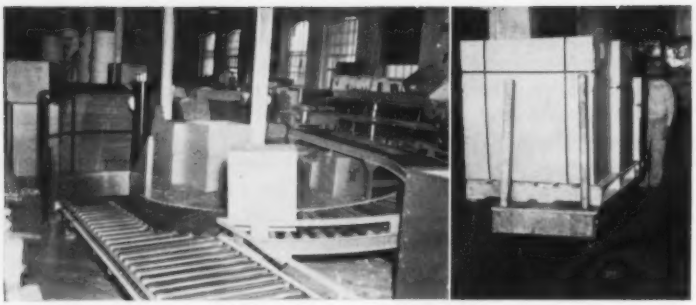
Grey Goods. The Chicopee program described here includes only the finishing plant. It starts with off-loom cotton goods put up in rolls which have been standardized in dimension and which vary in weight according to the style. Usually roll weights do not exceed 350 pounds. Rolls are brought in to the South end of the second floor wet processing department either from the plant's own weave room next door or from an outside company plant. The materials handling program does not cover this movement.

Mechanical Movement in Wet Processing. Within a 250-foot straight line placement of wet

STORAGE RACKS (second floor) near dryer delivery service its (dryer) output. One operator handles this job with a 1000-pound capacity pedestrian driven stacker with ram attachment.

STANDARD STYLES (left), ready for cutting and shipping, are moved to fourth floor on trucks by elevator and stacked on skids. Note pipe-stop at end of skid. Big variety of styles is likewise moved to fourth floor and stored in three-tiered steel racks (right). There are four such rows. All local movement is made by stackers with ram attachment.





CONVEYOR for finished goods (left). Palletized cases on truck (right).

CHUTE CONNECTS WITH THIRD FLOOR (left) which is a storage area. All rolls and cartons stored here are palletized and moved by stackers with fork attachment. End of cycle feeds cartons (right) from shipping platform by roller conveyor directly into vehicle. Program has eliminated physical strain and increased storage space 50 per cent.

processing equipment on the second floor, the goods in process are not often handled except for pot-eye guide threading. Movement from machine to machine is mechanical, activated by the feed and delivery action of the machine itself.

Desizing of the cloth is the initial operation. The cloth is then fed into tile storage bins. Following this, goods are mechanically loaded into bleaching kiers, then farther down the line to storage bins. From these bins, the goods are fed through dryers and delivered onto rolls.

Wet Processing Department Storage. At the north end of the second floor double-tiered racks have been erected to accommodate goods doffed from the dryers. The racks are constructed of self-locking steel members. Rolls are doffed from dryer delivery onto dolly trucks and moved the short distance to the rack area. A manually operated hydraulic lift with a ram attachment is used to remove the roll from the truck and place it either on the upper or lower tier of the racks. This entire operation is performed by one employee. The rolls weigh about 500 to 600 pounds, and the stacker is of a 1000-pound capacity.

The roll diameters of grey rolls, finished rolls, and shipping rolls all have standard maximum limits. All operations are geared to building these rolls as close to maximum as possible to obtain the best (most yards) efficiency in roll storage.

Goods in storage at the second floor racks await further finishing. If, for example, a roll is to be Sanforized, it is removed from the rack by the operator of that machine, processed, and placed on trucks for movement to the fourth floor.

In preparation for movement of goods to the next operation, trucks are loaded with five rolls to the truck. Two such trucks are placed on an elevator for movement to the fourth floor.

Finishing Department Storage. The fourth floor is usually referred to as the finishing department, because it is here that lengths are cut and packed for shipment to customers. Rolls are stored in the main area of this department in two ways; either on triple-tiered racks or on skids. The skids are used for standard items which are produced in large quantity where it makes no difference if a roll is selected from the top or bottom layers. The skids are fitted with pipe stops at each end.

The racks are of the same general construction as those in the second floor area. They extend the length of the department, some 300 feet, and are four feet deep.

Goods stored in these racks which have come from gauze frames or which have been Sanforized are wrapped with a paper shell for cleanliness. This precaution saves about 3½ yards of goods at the outside of the roll which usually becomes soiled.

Rider-type hydraulic lift trucks of 1,000-pound capacity, with ram attachments, are used to load rolls from flat trucks into the racks. These same trucks are used for removing rolls from the racks. Floor aisle areas have been reinforced with ¼" steel plate because stackers tend to chew up wood flooring. While stackers are of 1,000 pound capacity, they are capable of lifting to three tier levels instead of the two previously described.

Small Cartons. For such items as diapers, which are cut and packaged semi-automatically on the finishing department floor from rolls unloaded from storage racks, a separate procedure has been developed. The small cartons and rolls which are prepared for shipment are placed on one of two roller-type conveyors from one or more of four stations.

The packages move to a spiral chute connecting the fourth with the third floor. On the third floor the cartons are palletized and warehoused until ready for shipment. When ready, they are placed on a roller conveyor (in single

package units) which feeds another spiral chute connecting the third floor with the first floor shipping platform. All palletized small packages are handled by hydraulic stackers, rider driven, with fork attachments.

Handling of Piece Goods. Rolls are moved from fourth floor storage racks to either Cameron machines or folders in preparation for cutting and packing to a customer's order. Cartons so packed are palletized, loaded on flat trucks by fork stackers, and transported by elevator to the first floor shipping platform.

Equipment. Besides the racks which were constructed, equipment acquired by Chicopee for the program includes: five stackers of 1000-pound capacity, four rider driven, one pedestrian driven with both fork and ram attachments, and four hand operated lift trucks.

Control. All scheduling and control are carried on for the operations described in the finishing plant office. Grey goods are scheduled for wet processing, storage, cutting to order, and shipment at this one point. When rolls are placed in any racks, or when palletized cartons are stored on the floor, the operator turns in a ticket for each item put away with the location indicated. Racks and floor storage areas are marked by a letter-number system for this purpose.

The letter identifies a zone and the number indicates the rack. These tickets are placed in a locator file so that the scheduling department can always find a particular roll or small package when that style is scheduled.

In scheduling, a list is prepared of those styles to be run on the appropriate machines, including the locations of all items, and the list is given to the handiing operator so that he can make the required movement. It is the ease of performing this step which accounts for a good part of the value of the Chicopee system.

Shipping. At the first floor shipping platform, packed goods arrive in an accumulating area either by elevator or spiral chute, as previously described. As shipping records are prepared, packages are loaded onto vehicles by roller conveyor for shipment.

Warp Sizing — Article 2*

BY PAUL V. SEYDEL, D. Sc.
Seydel-Woolley & Co.
EXCLUSIVE

The introductory article of this new series, which contains many helpful pointers and discussions of all phases of the warp sizing operation not only for cotton but man-made fiber yarns as well, appeared in the May issue. When publication of "Warp Sizing" has been finished, TI's readers who save the individual articles will have a complete and up-to-date reference on the subject.*

The Material to be Sized—Cotton

Physical Structure of Cotton. Mechanical Properties. Variation in Fibers. Chemical Composition. Chemical Properties. Cotton Yarns—Effect of their Variation on Sizing.

AN intelligent consideration of the problem of sizing cotton yarns must be based on an understanding of the physical and chemical properties of cotton. If we wish to change cotton yarn in such a way that its weaving characteristics will be improved, we must first discover something of its pre-sizing characteristics: What is its physical form, how may that be improved, how may we best develop a size which will adhere to its surface, what natural constituents does cotton contain that are helpful to weaving, and what materials should be added?

Materials added through the size should not only give increased weavability in themselves, but should be compatible with the materials already present, and enhance their good properties where possible.

Cotton has been used for producing fabrics since 1500 B.C.—about thirty-five centuries. Yet it is only in the last half-century that development of scientific tools has enabled us to investigate the composition and constituents of cotton. We now know enough to see some of the reasons behind the use of many materials which had been selected through a tedious process of trial and error; yet much remains to be discovered.

Physical Structure of Cotton. Two excellent reviews on cotton composition and properties have been published. They are "Cotton Fibers" by Nickerson, *Ind. & Eng. Chemistry*, Vol. 32, p. 1454, (1940) and "Survey of the Chemical Composition of Cotton Fibers, Cottonseed, Peanuts & Sweet Potatoes," a bulletin from the Southern Regional Research Laboratory issued by the U. S. Dept. of Agriculture.

Cotton fibers are the seed hairs of the cotton plant (Gossypium) whose purpose is to protect the seeds, and to assist the wind in distributing the ripened seed. After the formation of the seed, the growth of the fibers proceeds in two stages. The first stage is the elongation of the fiber, during which the fiber attains its full length, and practically its mature width.

The second stage is principally

*Pages 99-106, TEXTILE INDUSTRIES for May, 1956. Deals with purpose of sizing, the ideal size, action of the size, importance of sizing, types of mixes.

Courtesy Metropolitan Museum of Art

Courtesy William Simpson Sons & Co.

Fabrics through the ages: left, ancient Egyptian mummy cloth of about 3,000 years ago; above, clothes made of fabrics with today's Everglaze finish, a result of modern technical developments.

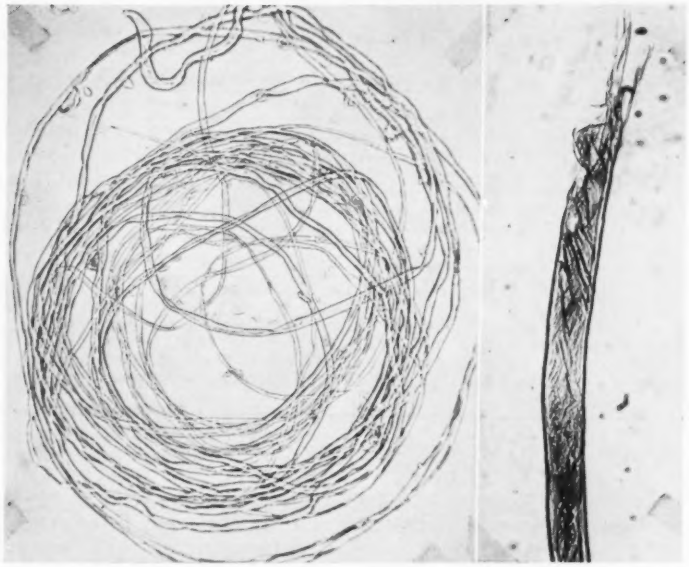
a strengthening and thickening stage, during which the fiber gains in cellulose content, and the wall thickness of the fiber is built up, while the fiber fills out its immature ribbon-like form to become nearly cylindrical. Each stage requires between 25 and 30 days, and is of the same length for practically all varieties of cotton.

As soon as the growth has been completed and about the time of the opening of the boll, the fibers begin to dry out. The juices which nourished the growing fibers either go back into the seed, or dry up by evaporation through the fiber. This leaves a central channel, or lumen, running lengthwise through each hair. As these juices dry out, the tubular hair collapses, forming a thick ribbon, with many spiral-like convolutions which may be seen under the microscope.

These twists are the result of uneven drying and are not regular, varying from about 50 to several hundred half-twists per inch and turning in either direction. This gives the cotton fiber a characteristic appearance which makes it immediately recognizable under the microscope.

Ripe Cotton Fiber. The ripe cotton fiber is composed of an outer chemically resistant primary wall which is probably a different form of cellulose from the rest of the fiber. The inner secondary wall contains most of the cellulose of the cotton. This secondary wall is built of from five to twenty-five layers, much in the form of the "rings" of a tree; indeed they have been explained to be a result of diurnal variation in the fiber growth though this is not certain.

The secondary layers are composed of very tiny fibrils or threads packed close together and arranged helically like the rifling of a gun barrel. Some spiral in one direction, some in the reverse. This gives the cotton fiber very much the appearance of a tiny yarn made from very minute fibers (the



Photomicrographs of cotton fiber: left, a single Sea Island cotton fiber magnified 60X; it is 2¼" long from base to tip and shows the ratio of length to width and variation in wall thickness. Right, a longitudinal view magnified 250X of another cotton fiber, illustrating tensile break.

fibrils). These fibrils are themselves built up from long crystallite bundles of cellulose molecules, estimated from X-ray measurements to contain about sixty closely packed molecules.

The cellulose molecule itself has the long narrow form of the cotton fiber. It has been shown by acid hydrolysis to be composed of condensed glucose molecules, which are linked together in long unbranched chains. These chains may be composed of about 3000 glucose units, giving the cellulose molecule a weight of about 500,000.

Surrounding the fiber itself is a cuticle composed of waxes, fats, pectic, and mineral matter. Tests on young fibers show that this is principally accumulated during the first stages of growth.

Mechanical Properties of Cotton. The breaking load of single cotton fibers averages about 5 to 6 grams and will vary from 2.5 to 10 grams, depending on the type of cotton. Values in this range are found by several investigators but their results for different varieties do not check each other very well.

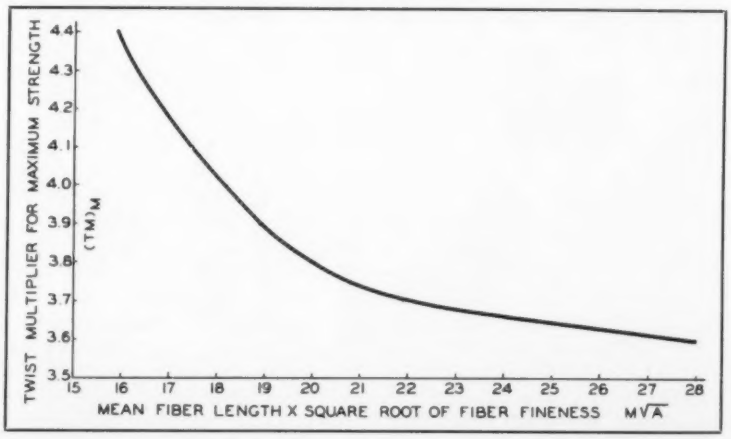
These strengths will be equivalent to about 50,000 pounds per square inch, about that of a good wrought iron or steel. However, when the fibers are twisted into a yarn, they show only 20 to 25 per cent of the calculated strength. This is because yarn breakage is due to slippage of fibers and spinning irregularities more than to fiber breakage.

Just as is observed with cotton yarns, the fiber strength increases with increasing humidity. The strength of sized yarn is greater at 75-85% R.H. than at lower humidities. Above this, although the fiber strength increases somewhat more with increasing humidity, the size film becomes too soft and becomes weaker, so that the net result is detrimental for weaving. The rate of decrease in strength below 70% R.H. is much less for sized yarns than for unsized.

Elastic Properties. The elastic properties of cotton are also affected by its moisture content. The average fiber elongation at the breaking point rises from 5.3 per cent at 10 per cent relative humidity to 9.5 at 100% R. H. The rigidity of cotton fibers has been measured for both bending and twisting, and has been found to decrease with increasing temperature and with increasing moisture content. The rigidity of dry cotton is almost ten times as great as that of cotton at 100 per cent relative humidity.

The elasticity of cotton is imperfect; that is, it will not return completely to its initial length or position when the stress causing deformation has been removed. This plastic effect is increased with a constant stress by increase of time of application of the stress, so that the cotton acts in a way as a highly viscous paste. This phenomenon is observed in the mill by the setting of yarn twist on standing for long periods of time. Also, what recovery the cotton does undergo is not done all at once, as in the

It is well known that after a certain point increase in twist will weaken yarn rather than strengthen it. This graph, data for which were supplied by C. Busch Landstreet of the U. S. D. A., shows optimum twist for maximum yarn strength.



case of rubber, glass, and metals, but occurs partly over a time as "creep."

Plasticity is also increased by heat and by moisture. Probably the loosening of the fibrils by absorbed moisture contributes to a great extent to the plasticity by allowing them to slip or change position more easily. These properties are very important, not only to spinning and twisting, but also to weaving, where many strains per minute are put on the cotton.

Composition of Typical, Mature Cotton Fiber

Constituent	Per Cent of Dry Weight		
	Typical	Low	High
Cellulose	94.0	88.0	96.0
Protein (Nitrogen × 6.25)	1.3	1.1	1.9
Pectic substances	1.2	0.7	1.2
Ash (see Table on page 116)	1.2	0.7	1.6
Waxes and fats	0.6	0.4	1.0
Total sugars	0.3		
Pigment	Trace		
Other	1.4		

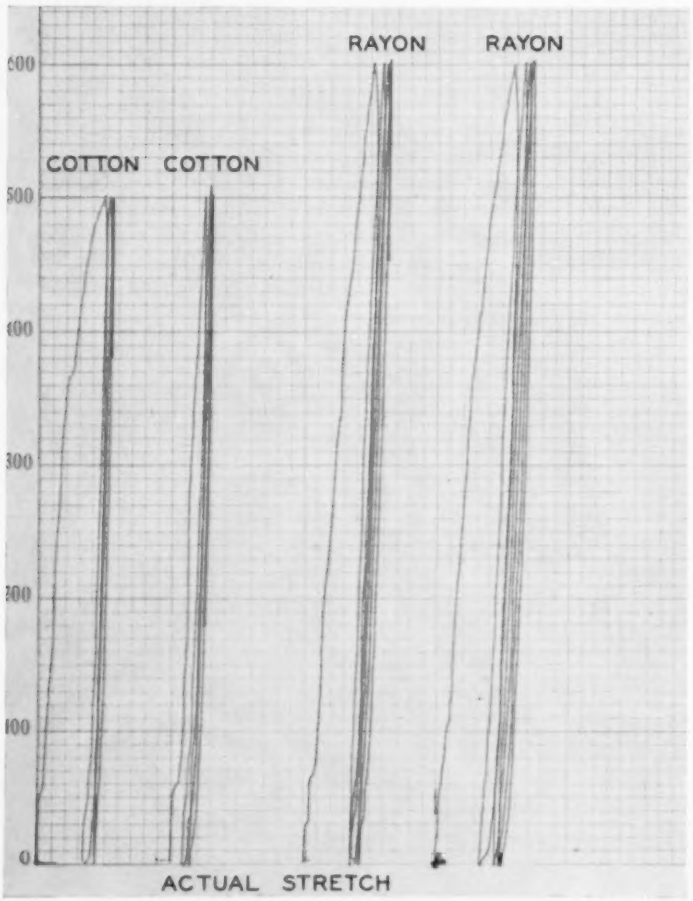
From Guthrie, et al, Sou. Regional Res. Lab.

Since this was published, Guthrie and McCall have found cotton to contain about 0.5% malic acid, 0.07% citric acid, 0.004% oxalic, and about 0.3% of other unidentified organic acids, thus accounting for about half the remaining unidentified material.

Variations in Cotton Fibers. In addition to the variations already mentioned in the physical properties, the size, shape, and coarseness of cotton fibers vary greatly with the source. Staple length may vary from a low of a half inch for some Indian cottons to over two inches for the Edisto variety of Sea Island cotton. In general, the longer the staple, the finer the fiber. Fiber diameters may vary from 0.00063 inches to 0.00087 inches. These are average for certain varieties, but there are also variations within any one variety, just as there are in one race of men.

The presence of fibers of all ages from young unripe fibers to old dried fibers accounts partly for this. In addition, many varieties of cotton normally exhibit both short growths and long growths on the same seed. The Fiji and Tahiti Sea Island cottons are said to be the most irregular and the Orleans the most regular.

Serigraph chart showing extension of cotton and rayon yarns under repeated stresses. Yarn once stretched does not return all the way to its original length.



Distribution of Staple Size in Bale of 1 3/16" American Cotton

Size	Per Cent
¼-⅜	4
½-⅝	11
¾-⅞	16
1-1⅛	18
1¼-1⅜	27
1½-1⅝	16
1¾-2	8

Matthews, "Textile Fibers," 4th Ed., Wiley & Sons, p. 417.

Since the long and short fibers do not incorporate well together in spinning, the irregular varieties will produce more waste and fly, and have more protruding ends which must be laid by the size. Variations within the type may be as much as one-half inch in staple length.

Chemical Composition. Variations in the chemical composition depend on the age, the variety, and the source of the cotton. Since most of the second stage of cotton

growth is the formation of the cellulose, the younger the cotton, the more of the other natural ingredients such as wax and minerals that it will contain.

Cotton contains the highest percentage of cellulose of any plant product. The table (page 114) shows the typical analysis of cotton.

Since most of these natural ingredients occur in the cuticle on the surface of the fibers, many of them are removed by processing, such as dyeing, kiering, bleaching, etc. As they have a definite effect on the behavior of the cotton yarns, it is important to know just what the natural ingredients are, and how difficult their removal is.

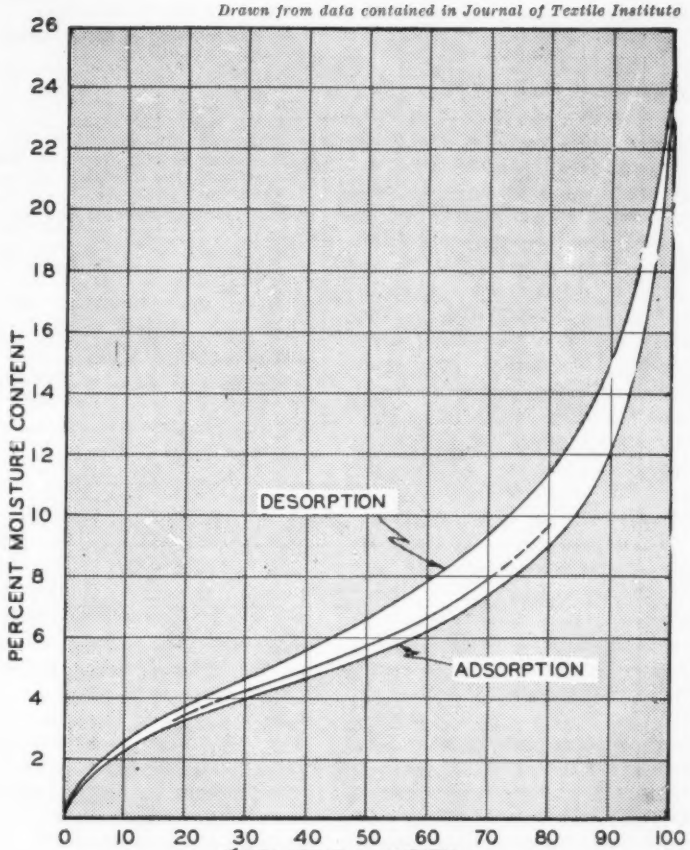
Water Content of Cotton. Water is one of the natural ingredients of cotton which has a marked effect on its properties. The effect of moisture has already been mentioned under the physical properties of cotton. Water is easily removed from cotton by heating or by drying in vacuum over moisture absorbers, such as phosphorous pentoxide. All the water seems to be physically absorbed — statements that one or two per cent is chemically combined have never been proven.

Peirce claims that water is absorbed in two phases. He bases his theory on the fact that water seems to have two types of effects, one on the physical properties of strength, elasticity, rigidity, swelling, etc., and the other is the supplying of water for chemical reactions, mold growth, and maintaining vapor pressure. Slight additions of moisture to dry cotton change the first set of properties without much effect on the second, while slight changes in moisture content of moist cotton affect the second without materially affecting the first.

The first phase is an attraction of water molecules by the hydroxyl molecules of cellulose; the second is a physical filling of the spaces between the fibrils by physically absorbed water, in a sort of sponge effect.

Explanation of Hysteresis. The fact that the moisture content of cotton at any definite humidity is dependent on whether it was wet or dry before being exposed to this humidity is partly explained by this.

Drawn from data contained in Journal of Textile Institute



RELATION BETWEEN RELATIVE HUMIDITY AND MOISTURE CONTENT OF RAW COTTON AT 25° C.

The accompanying graph chart showing the moisture content of one sample of raw cotton at 25 degrees C and various humidities, shows the difference in moisture according to whether the cotton is losing or picking up moisture.

Any point between the two curves might be valid for the moisture content, depending on the previous treatment of the cotton. This effect, known as "hysteresis," may be considered to be due to the extra energy required to push apart the fibrils on absorption, so that more water molecules may penetrate the fiber. This is, of course, an over-simplification of the physical chemist's theories, but is essentially the cause.

It is important to note that the previous history has such an effect. For instance, the moisture content on desorption at 60 per cent R. H., is about the same as the moisture content on absorption at 70 per cent R. H. This is not only important in textile testing, but is one of the reasons that yarns should not be dried too much on sizing, for then greater humidity is required in the weave room to give the same moisture content on the yarn.

In addition to the normal hysteresis, the moisture content of cotton will be affected by its physical condition in changing from one humidity to another. Single fibers will assume moisture equilibrium within a few minutes, yarns in about an hour, and cotton on beams or in bales may require several days. This is due principally to the lack of circulation of moisture-carrying air through the sample. The rate of approach of equilibrium will de-

pend also on the count or cloth weight.

Waxes and Fats in Cotton. The fats and waxes of cotton are about as important in the first stages of processing as is the water. Spinning trials with dewaxed cotton showed very bad behavior in drawing and spinning, excessive waste, irregular results, more breakage, and a tendency to adhere to the rollers. Due to the lubrication value of the waxes, weaving is also better with normal cotton, even though the dewaxed yarns have a higher breaking strength (a result of less fiber slippage). This is another evidence that tensile strength alone is not an indication of weavability.

The amount of wax normally in cotton runs between one-half and one per cent. A variety of cotton has been found that contains 15 per cent wax, but its fibers have defects that prevent its economic growth for both wax and fiber. The wax is similar in appearance to carnauba or dark beeswax, and melts from 76 to 81 degrees C (about 175 F). The wax averages 60-70 per cent unsaponifiable matter, the presence of which makes impossible a determination of added unsaponifiable oils or fats, unless the analyst has also a sample of the raw cotton.

The protective action of the waxes on the cotton fiber is especially noted in its water repellency. Raw cotton will float almost indefinitely on the surface of a beaker of water, while dewaxed cotton will sink in a few seconds. Wetting agents for cotton must be designed to wet the materials found in the cotton wax.

The ordinary bleaching and desizing operations remove only a small percentage of the normal cotton waxes, while kier boiling will remove about half. Presumably the presence of lower-melting fats and oils in the size mix will assist in the removal of the higher-melting cotton fats, as well as increase their lubricative power for weaving by blending to form softer, lower-melting mixtures.

The composition of cotton wax is complex, most of its constituents having names familiar only to oil chemists. It contains principally high molecular weight hydrocarbons, alcohols, esters, fatty acids, and phytosterol. The most important are gossypyl and montanyl alcohol, carnaubic, palmitic and stearic acids, amyrin, sitostercl, and a large number of paraffin hydrocarbons.

Ash in Several Varieties of Cotton

Source of Cotton	Number of Varieties Tested	Average % Ash
South American Cotton	7	1.16
Africa and Iraq (American cotton)	15	1.47
American Cotton grown in India	7	1.25
Native Indian Cotton	10	1.28
Egyptian Cotton	10	1.22
Sea Island Cotton	6	0.98

The composition of the ash varies greatly, depending on the source, probably principally due to the nature of the soil. However, the plant itself normally selects certain minerals from the soil, and the following ranges are normal for the more important mineral matter: Potassium—20-40%, Sodium 3-8%, Calcium 5-10%, Magnesium 5-10%, Iron 1-3%, Aluminum 2-4%, Sulfate 5-15%, Chloride 3-10%, Carbonate 10-20%, Phosphate 3-5%, Silica 1-5% and traces of Copper and Manganese. Most of the ash is removed by any washing processes.

Mineral Matter of Cotton. The mineral matter of the cotton is the only other natural ingredient that has been shown to be of interest in sizing or weaving. The effect of the pigment is a concern of the bleacher and dyer, and the proteins and pectins have had no important influences attributed to them. Possibly the organic acids recently discovered may have some effect at high temperatures, but no work has yet been done to determine this.

One influence that the proteins, sugars, and organic acids have, is that they furnish a fine food for micro-organisms of various sorts. Once this food has run out, many of the organisms will attack the cotton fibers themselves, even though they would not normally grow on purified cotton.

It has been shown that quantities of ash or mineral matter in cotton much above one per cent are usually attributable to sand and dirt with the cotton. Fargher and Probert have investigated the subject thoroughly and found the normal content of cotton to be 1.0 to 1.3 per cent. The accompanying table shows some of their results.

Several investigators have tried to determine the manner in which these minerals are combined as salts, but this has not yet been satisfactorily concluded. One of the reasons is that these investigations have generally neglected the important fact that some of the metals are almost surely combined with the organic acids and with the pectic acid as salts. There is probably a mixture of all the possible combinations.

Several of the salts are hygroscopic, particularly the chlorides of calcium and magnesium. This accounts for a certain amount of the moisture absorbing power of cotton, but only partly as cotton still absorbs moisture when the ash has been washed out.

Cotton ash is alkaline, but this does not mean that the total of the minerals in cotton is alkaline. The alkalinity is produced on ashing the metal salts of organic acids, which leave the oxides and carbonates of the metals, giving an alkaline reaction.

Other than waxes and mineral matter, cotton contains small quantities of proteins, pectins, a wide variety of organic acids, several different kinds of sugars and other carbohydrates, and several other less important materials which occur in practically negligible quantities.

It is said that the high pH found in some cottons is due to the use by micro-organisms of the organic acids as food. Generally cotton which has been exposed to attack by these microscopic beasts also has a shortage of the normal amounts of sugars and other solu-

Action of Salts on Cotton

1 Per Cent Solutions	Ripping Strain			Tensile Strain		
	Air-dry	212 F	248 F	Air-dry	212 F	248 F
Original fabric	100.0	95.4	98.3	100.0	101.9	102.2
Calcium chloride	103.3	97.9	97.6	96.5	96.7	87.8
Magnesium chloride	102.0	99.9	100.1	95.8	93.5	96.6
Zinc chloride	98.1	93.3	95.1	103.7	100.8	91.6
Sodium sulfate	101.8	99.9	106.5	94.7	94.1	94.4
Sodium chloride	113.4	115.0	101.3	99.4	98.3	97.5
Starch solution	112.4	117.5	102.6	96.9	89.3	86.1
Soap solution	136.9	146.2	128.1	94.6	91.4	90.9

Hubner and Malwin, Jour. Soc. Chem. Ind., 1923, *p.* 66

ble carbohydrates.

Cotton exposed to much rain will often have a lower content of mineral matter and other soluble ingredients, due to having had these washed out by the rain. Generally, however, this effect will not be great, because of the waterproofing effect of the cotton waxes.

With a full knowledge of the composition of the cotton fiber, the textile chemist is in a better position to judge what is needed to prepare the warp for more efficient weaving, and to understand the compatibilities of the ingredients to be added to those already present, as well as their compatibilities with ingredients and treatments used in further processing of desizing, bleaching, finishing, storing, etc.

The average amount of natural materials found in cotton besides water and cellulose is six per cent, but only about two-thirds of this is washed out by normal scouring and kiering. For sizing operations, we should know in what proportions these materials are generally removed, and take this into account when using a size formula for colored yarns.

Chemical Properties of Cotton. Cotton is fairly stable to heat. Dried at temperatures up to 245 degrees F it will recover its lost moisture, elasticity, and tensile strength on exposure to the air. Above 300 degrees, it begins to decompose slowly, turning yellow The presence of steam increases the rate of decomposition. Cloth exposed to steam at 212 degrees F. for ten days, has been found to lose half its tensile strength, irrespective of whether it is grey cloth or boiled-out cloth.

Sunlight weakens fabrics by the formation of oxycellulose, which from the layman's point of view may be considered as a deterioration product of the cellulose. The action is not from the sunlight alone, but is an oxidation of the cellulose by the oxygen in the air. This reaction is catalyzed by sunlight.

Effects of Acids and Alkalies. Very dilute acid solutions in the cold do not affect cotton, but when dried on the fiber, they concentrate and tender the cotton. This is true of both mineral and organic acids, except for such volatile acids as formic and acetic which are driven off on drying.

Tannic acid has no harmful action, but is strongly absorbed by cotton. Fatty acids, stearic, and palmitic have no effect. Strong acids react with cotton for production of such materials as cellulose acetate, cellulose nitrate (gun cotton), and vegetable parchments.

Alkalies in dilute solution have practically no effect in the cold, but when boiled with air may form oxycellulose. Strong caustic produces the familiar mercerizing effect. Ammonia alone has no effect, but in the presence of copper or zinc oxides will dissolve the cotton.

Alkaline and neutral salts in general do not affect cotton, though certain sulfides and chlorides will tender the cloth when dried into it at high temperatures. Sodium and iron sulfides decompose on storage to give sulfuric acid, which tenders the cloth similar to the tendering with sulfur colors; magnesium and aluminum chlorides break down, giving hydrochloric acid with excessive heating. Calcium and zinc chlorides have been said to do this, but they decompose only at such high temperatures that the cotton would have been long since charred.

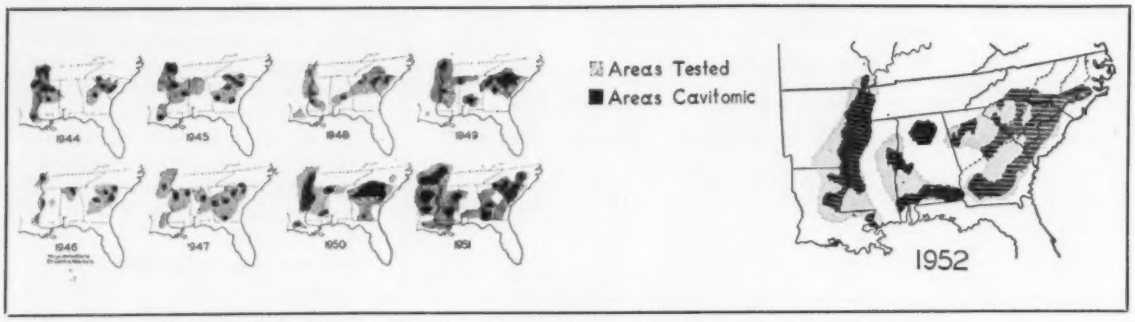
The accompanying table shows the action of one per cent solution of various salts dried into the cloth. Within experimental error the action is negligible. It is interesting to note that the cloth treated with starch shows a lower tensile strength than that treated with the salts, and the soap is about the same.

The reason for the high ripping strength with soap was not explained nor could the other smaller variations be explained. When it is remembered that the total amount of size compound which is put on the cloth is about one per cent, and the salts in the size therefore only one tenth of one per cent of the cotton (incidentally, about one tenth of the amount of naturally occurring salts), it is obvious that the salts in the size can have no detrimental effect.

Cavitoma. It has long been known that cotton is susceptible to attack by a number of microorganisms. Bacteria and fungi which live in the ground will attack cotton, "rotting" and destroying the fibers. Although pure cotton is not easily attacked by molds, if natural cotton or sized cotton is kept damp, the mildew growth which first feeds on the sizing materials or the natural impurities of the cotton, will begin to attack the cotton itself, once their original food source has run out.

One process of deterioration of cotton has been investigated by the Kendall Mills laboratories, and the deterioration blamed on microorganisms. The organisms themselves have not been isolated, but the changes in the cotton properties are characteristic of the type of changes caused by microorganism attack.

Such cotton is called "cavitomic cotton," and the disease referred to as cavitoma. Cotton from certain areas was found to have more



Cavitomic cottons are said to have been found in these areas in past years.

chance of infection than that from other areas. The deterioration process results in comparatively embrittled fiber, which shows loss in tensile strength, and decrease in staple length during storage. The result of this is that the cotton is more difficult to card and spin, there is more card waste, and more ends down in spinning and subsequent processing.

Cavitomic cotton may be identified by its high pH values, which may run as high as 9 or more when tested by means of a universal dye indicator. pH, however, is not a certain criterion, as some cottons have been found with a high pH and no evidence of cavitoma. Another check may be determination of easily soluble reducing materials (which includes such compounds as dextrose). In cavitomic cotton, these materials are at a very low level, or practically non-existent, as compared with ordinary cotton.

Cavitomic cotton may often be used without difficulties if it is processed immediately after ginning. Deterioration occurs during storage, and deteriorated cottons should be blended with normal cotton before processing to avoid processing difficulties.

Effect of Yarn Condition on Sizing Process. The condition of the cotton yarns has a great deal to do with the amount and concentration of size that will be needed. The British Shirley Institute has made thorough studies of this. They have shown that the size take-up depends, among other things, on the surface of the yarn, the finer counts taking up more size.

Finer staple is generally less receptive of size, as it gives a more compact thread. Within the yarn counts, those with a heavier twist take up less size than the loosely twisted ones; for instance, two 16s yarns with 12.4 and 15.9 turns per inch took up size in the ratio of 122 to 100.

Moisture vs Take-Up. The amount of moisture on the yarns also affects size take-up. In the extreme cases of wet beam-dyed yarns, it is very difficult to obtain an adhering size film, and uniform results are practically out of the question without extreme care in sizing. On the other hand, a dyed yarn that has been dried is much more absorbent than normal cotton, due to removal of part of the cotton waxes.

Different colors take up size differently. Although the dyed yarns may be more readily wetted than the natural cotton, it is not also true that they will absorb more water or more size. The waterproofing waxes which were removed made it difficult for the water or the size to penetrate the yarns, but although these have been removed, with certain dyeings such as Turkey reds, the yarn may be so loaded with dyestuff, oils, or soap that the size does not take up well. Here it is not a question of whether the yarn can be wetted, but a case of the microscopic spaces in the yarn being so full of other materials that there is not as much room for the size.

The construction of a set will also influence the size take-up since the heavier sets will support the squeeze roll, and less squeezing will be obtained. Particular care must be taken with regard to this in sizing mixed counts, so that the lighter count does not get sized too heavily.

(Continued next issue)

Slow Down Wool Cards for Addition of "Kemp"-Type Fiber

STAFF PREPARED

EXCLUSIVE

OF CURRENT interest to wool yarn manufacturers is duplication of yarns containing small percentages of kemps. Such yarns are usually associated with the weaving of Harris tweeds wherein the kemps lend a novelty effect because of their coarseness, dead white color, and resistance to dye acceptance.

Duplication of these effects has been common through use of coarse, dull viscose rayon staple being marketed by a number of fiber producers.

When running this type of fiber on a card set, one mill which uses the novelty staple in percentages of about 5 per cent found that conventional speeds created a problem: the coarse, brittle fiber had a tendency to be thrust to the sides of the cylinder.

The problem was solved by slowing down the fancy, and the work ran better on a card on which the cylinder speed had been reduced from 72 rpm to 60.

"How We Solved a Problem in Making Fancy Yarns"

BY WILLIAM B. YOUNGER
Virginia Mills, Inc.
Swepsonville, N. C.

ABSTRACT*

MILLS WHICH make fancy yarns and weave them know that each different yarn has its own peculiarities. There is hardly any set of rules that can be followed that will guarantee a control of quality of all the various types of fancy yarns that can be made. We have approximately 300 yarns that we have made, and have specifications that can be used to reproduce these yarns at any time. We add to this number every week.

Since there is such a variety of fancy yarns, this paper is limited to a typical problem that we encountered with one of the yarns that we are currently running. This was a problem on our Ratine No. 141. We first noted a variation in the appearance of the yarn on the loom quills. It had short places in it where the twist was hard and made the yarn have shiny places in it. To better familiarize you with this trouble, I would like to tell you how this yarn is made.

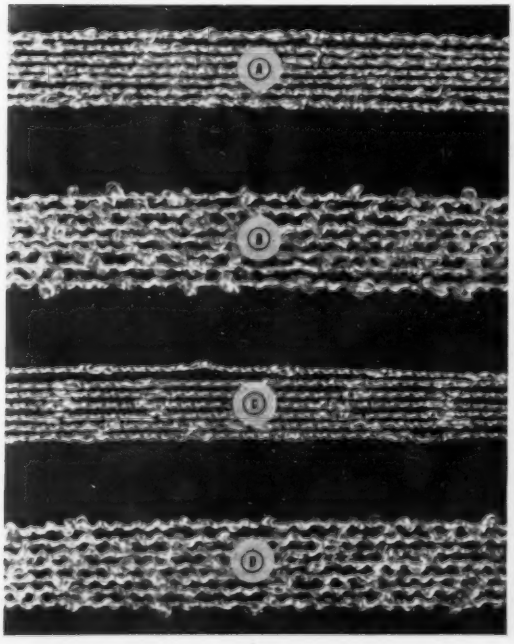
Construction of Ratine Yarn. The components of the yarn are two ends of 12/1 cotton for a core and two ends of 900-denier Chromspun for excess, with one end of 12/1 cotton wrapped on the above yarn for a binder. The yarn is made in a two-process operation. The first process is as follows: The two ends of 12/1 are run over the top roll of a two-roll fancy twister. The two ends of Chromspun acetate are run over the bottom roll of the twister. The bottom roll is turned 2.5 times faster than the top roll. This lets the acetate feed onto and wrap around the cotton. Sixteen turns of "S" twist are put in the yarn. The acetate covers the cotton fairly evenly and has a small, loopy appearance.

The second process yarn is made of one end of first process yarn and one end of 12/1 cotton. Six turns of "Z" twist are put in the second process yarn. This is opposite from the twist put into the first process yarn. By putting the twist in the opposite direction, the two ends of acetate bloom out and make the yarn appear fluffy and full.

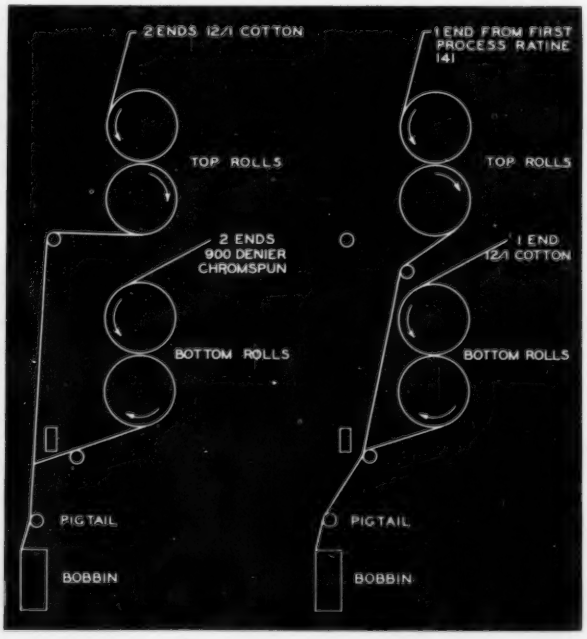
Trouble With Ratine Yarn. Now we will get back to the trouble we were experiencing. As stated above, we were using three ends of 12/1 cotton in this yarn. We learned that by substituting three ends of 12/1 spun rayon in the yarn, we could make a substantially stronger yarn that ran bet-

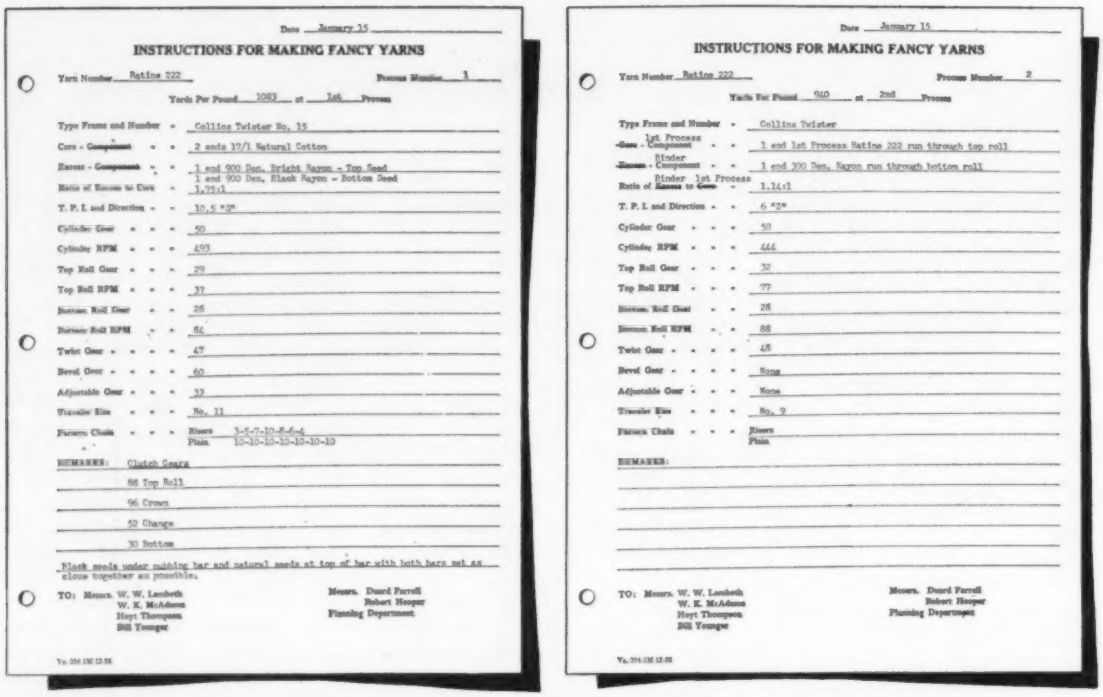
*From a paper presented at the spring, 1956, meeting of the Carolinas Section, American Society for Quality Control.

RATINE YARNS: Samples A and C are first process yarns; samples B and D are finished yarns. C and D have a rayon core and binder; A and B have cotton.



YARN THREAD-UP for twisting Ratine No. 141 at Virginia Mills: first process at left, second process at right. Twisters are set up according to written instructions on forms like the one on the next page.





Date January 15

INSTRUCTIONS FOR MAKING FANCY YARNS

Yarn Number Ratine 222 — Process Number 1

Yards Per Pound 1083 at 1st Process

Type Frame and Number	Collins Twister No. 15
Core - Component	2 ends 37/1 Natural Cotton
Excess - Component	1 end 900 Den. Bright Rayon - Top Seed 1 end 900 Den. Black Rayon - Bottom Seed
Ratio of Excess to Core	1.75:1
T. P. I. and Direction	10.5 "S"
Cylinder Gear	50
Cylinder RPM	493
Top Roll Gear	29
Top Roll RPM	37
Bottom Roll Gear	28
Bottom Roll RPM	84
Twist Gear	47
Bevel Gear	60
Adjustable Gear	33
Traveler Size	No. 11
Parson Chain	Risers 1-6-7-10-6-6-4 Plain 10-10-10-10-10-10-10

REMARKS: Clutch Gears
86 Top Roll
96 Crown
52 Change
30 Bottom

Black seals under rubbing bar and natural seals at top of bar with both bars set as close together as possible.

TO: Messrs. W. W. Lambeth, W. K. McAdoo, Hoyt Thompson, Bill Younger
Messrs. Durd Farrell, Robert Hooper, Planning Department

Va. 304 3M 12-55

Date January 15

INSTRUCTIONS FOR MAKING FANCY YARNS

Yarn Number Ratine 222 — Process Number 2

Yards Per Pound 940 at 2nd Process

Type Frame and Number	Collins Twister
Core - Component	1st Process 1 end 1st Process Ratine 222 run through top roll
Excess - Component	Binder 1 end 900 Den. Rayon run through bottom roll
Ratio of Excess to Core	Binder 1st Process 1.14:1
T. P. I. and Direction	6 "Z"
Cylinder Gear	50
Cylinder RPM	444
Top Roll Gear	32
Top Roll RPM	77
Bottom Roll Gear	28
Bottom Roll RPM	86
Twist Gear	48
Bevel Gear	None
Adjustable Gear	None
Traveler Size	No. 9
Parson Chain	Risers Plain

REMARKS:

TO: Messrs. W. W. Lambeth, W. K. McAdoo, Hoyt Thompson, Bill Younger
Messrs. Durd Farrell, Robert Hooper, Planning Department

Va. 304 3M 12-55

YARN SPECIFICATION SHEETS are made up in six copies. A copy is sent to each department concerned, and is filed there in a loose leaf binder.

ter in the loom and gave less trouble at all processes as far as end breakage was concerned. The rayon gave no change to the appearance of the cloth. We decided, therefore, that we would start using spun rayon on all new lots of Ratine No. 141. We did this and received complimentary remarks from the weave room on how much better the yarn was running since we changed to the spun rayon core and binder.

Then the trouble started. On one particular color of Ratine No. 141, we started finding short slick places in the yarn. We wove this yarn and the slick places showed up in the cloth, so we started looking for the trouble.

The particular color that was showing the slick places was made on the same first process twister as some other colors that had shown no slick places. This rather confused us, but we were fairly certain that something on that twister was causing the trouble since we could find the slick places in the yarn as it came off the first process twister. We observed the twister running and thoroughly checked the tensions as the yarn was being pulled from the creel, but we could find nothing that we thought would cause the trouble.

There was one difference in the yarn that was previously made on this twister and had not shown slick places, and the yarn that was presently being run and was showing slick places. The yarn previously made had the cotton core in it. The present yarn had spun rayon core in it. Now spun rayon has the peculiarity of having a smaller diameter, count for count, than does cotton. Spun rayon is also slicker than cotton.

We concluded, therefore, that for some reason the spun rayon must be causing the ratine yarn to have slick places in it, where previously, on the same spindles, the cotton yarn was showing no slick places. Let me say here that we were running spun rayon in this same yarn on other twisters and were having no trouble with it. This was rather confusing, but to prevent the possibility of getting into trouble, we went back to our old way of making Ratine No. 141 on all twisters, which was with a cotton core.

We then decided that on this one particular twister that was making the bad yarn, we would concentrate our efforts and find out why. We thoroughly cleaned the twister. We checked the creel tension devices. We checked the individual spindle speeds with a Strobotac. We checked the gearing. We changed travelers and looked at rings for excessive wear. We did all of the above things and some more before we finally got around to plumbing the spindles. When we did plumb the spindles, however, and ran some samples, we found our trouble. The spindles that were out of plumb gave no trouble as long as we used cotton as a core yarn. However, where we used rayon as a core yarn, the rayon being slick and of a smaller diameter let the excess yarn slide around and this caused the slick or hard looking places in the finished yarn.

In the photograph [on page 119], samples A and B have the cotton core and binder. Samples C and D have the rayon core and binder. Samples A and C are the

first process yarn, and Samples B and D are the finished yarns. Samples A and C were made on the same first process spindle; samples B and D were made on the same second process spindle. You can readily see slick places in Samples C and D. After the spindles were plumbed, the yarn with the rayon core showed no further slick places. We are now running all of our Ratine No. 141 with rayon core and binder.

We have to keep our spindles plumbed better, however, than we did when we ran cotton core and binder, but the improved quality of the yarn is worth the expense of more frequent spindle plumbing.

The yarn specification sheet (see illustration) is made up in about six copies and sent to the appropriate overseer where it is filed in a loose leaf binder. When the twisting overseer gets an order to make a particular yarn, he goes to the specification sheet and sets the twister accordingly. Before that twister is started up, a twister change record is completed and signed by the shift overseer. From then on we depend on everyone who handles the yarn to watch for variations in appearance and to report anything unusual.

Low Salaries Offered Graduates by Mills Given as One Reason for Dwindling Interest in Textile Courses

"We are losing our best boys to fields that do not hold a fraction of the opportunities offered by the textile industry, Dean George Griffin of Georgia Tech declared recently.

Warning that if the present trend of decreasing interest in textile manufacturing as a career continues it will not be long before the industry will "really suffer" from a shortage of engineers, this college official made certain recommendations for correction of the condition.

Whether the opinions expressed in his statement, which is reproduced here, are shared in whole or in part by his colleagues in other schools offering college-level textile training is not known. However, their comments will be most welcome.

Futhermore, textile industry executives will undoubtedly have some thoughts on the matter, and they too are urged to state their opinions.

TEXTILE INDUSTRIES will be happy to publish all replies received. It will be appreciated if correspondents will indicate in their letters if this is agreeable with them and whether or not their names may be used with their comments.

Especially encouraging is the fact that before it was possible to publish Dean Griffin's suggestions in this magazine, the American Association of Textile Chemists and Colorists indicated an interest in undertaking efforts to improve this situation. And, North Carolina State College Professor Henry Rutherford recommended an organized plan for attacking the problem.

Details of Prof. Rutherford's proposal are presented here following Dean Griffin's statement.— The Editors.

Editor, TEXTILE INDUSTRIES:

Of great concern to the institutions offering courses in textile engineering is the seeming lack of interest by college students in one of our nation's foremost industries and one that more and more needs the engineering touch.

This problem is of particular importance to us here in the South. The advancement of the industry, the moving of plants to our section, and the great need for engineers to help in the development of new fibers and other problems facing the industry emphasize the need for immediate corrective action.

It is suggested that the industry set up a committee to study this problem. It could be done on a state-wide basis, but since this problem is a national one, it seems that some arrangement should be made for industry-wide consideration of the matter.

Student enrollment in every other engineering field is growing; but as time goes on, as far as the college-level textile courses are concerned, we are losing ground. And this means that in a few years the textile industry will really begin to suffer. Once we begin to lag, it will take years to develop our program to fill the demands of the industry.

Two Problems. It is believed that there are two problems that must be faced: (1) the inadequacy of salaries offered college graduates in the textile field, and (2) the lack of information available to a student when he is faced with making a decision as to just what course he will study at college.

Salaries. As to salaries, which really is the basis of the dissatisfaction, we have only to compare salaries offered by the textile industry to those offered by the other industries.

For the last few years, offers made to graduating seniors by other industries run anywhere from $25.00 to $75.00 per month more

than those offered by the textile manufacturing companies. The average salary offered last year [1955] to graduating seniors in other engineering fields was in the neighborhood of $370.00 per month; whereas, about $325.00 per month was offered to textile graduates. This year [1956] the starting salaries offered are somewhat higher on the average—close to $400.00 per month.

It seems that a committee should make a complete study of this problem to determine what can be done to bring the salaries of textile school graduates in line with those going to the other industries.

We all realize that to pay these textile school graduates more might necessitate the raising of salaries throughout the industry. This, however, would be a small price to pay for a steady influx of young engineers into the textile manufacturing field.

Sell High School Grads on Textiles. Now, how are we going to, as they say in the Navy, "pass the word" to prospective textile engineers?

First, the industry should employ a so-called missionary, or, as some industries refer to them, "an ivory hunter." These are the men sent out to interview graduating high school seniors. This man should go from high school to high school, meeting with seniors, speaking at student assemblies, and spreading the word as to the value of the textile business to the nation, as well as the opportunities offered in this field.

One more thing should be mentioned, and this is that a brochure, such as the one recently published by the A. French Textile School at Georgia Tech, should be prepared for presentation to prospective textile students. This could be mailed to principals of the high schools with the request that it be placed in the hands of the students. Should a man be employed to visit the high schools, as was suggested previously, this would be valuable aid in his work.

This brochure should contain complete information regarding the entire textile field, opportunities offered, two or three examples of the advancement of college graduates in this field, plus any other pertinent information.

The day has passed when the textile mill was a family affair, depending on the arrival to manhood of the president's son who was expected to take over when he developed to such an extent that he could assume responsibility. Textile mill owners of today depend on the managerial skill of men trained in this field for operation of their plants. Therefore, we should make every effort to have on hand a pool of outstanding young men from which to draw.

I am sorry the writer does not know more about the economics of the situation so that he might offer better suggestions, but he does know that we are losing our best boys to fields that do not hold a fraction of the opportunities offered by the textile industry.

GEORGE C. GRIFFIN
Dean of Students
Georgia Institute of Technology

Proposal to Create Interest in Textile Education

AATCC would lead effort. Textile industry associations would be asked to provide funds.

BY HENRY A. RUTHERFORD
Head, Department of Textile Chemistry
School of Textiles
North Carolina State College

EXTRACT*

FOR THE past several years, enrollment of students in all college-level textile schools in the U. S. has steadily dropped off. At the same time, the demand for textile-school graduates has steadily risen to the point where today's graduate averages a choice of seven positions. Both of these trends are clear cut, and are not related to population trends, industry or school location, or types of curricula offered.

Beyond any doubt, the present situation is the result of lack of interest on the part of young people in the textile industry and the careers it offers. This lack of interest, in turn, is the result of poor public relations on the part of the textile industry, especially at the level of high-school students.

The situation is more critical in the case of textile chemists than for technologists, and extends beyond textile chemistry to the broader areas of chemistry.

At its last council meeting, the American Association of Textile Chemists & Colorists indicated an interest in undertaking efforts to improve this situation. It is the purpose of this report to recommend an organized plan for attacking the problem of "no interest in textiles" and to suggest a program to be carried out by the proposed organization.

*From a paper presented by Professor Rutherford at the spring meeting of the Eastern Carolina Division of the Southern Textile Association in Raleigh, N. C.

The Proposal. It is proposed that the effort be led by a full-time, paid director for the program who would operate under the AATCC organization, who would carry out the policies approved by the association's textile education committee, and who would make use of the organizational structure of AATCC to carry out the program on national and local levels.

It would be the function of the director or the executive secretary of the textile education committee to formulate plans for attacking the program of "no interest in textiles" on the part of young people. These plans would then be submitted to the overall education committee for approval, and this committee would charge the director or executive secretary with the task of executing the plans.

The means that would be employed would include:

(1) National and local advertising, sponsored either by funds raised by the education committee or by individual industrial firms as part of their own advertising efforts;

(2) Radio and television advertising and programs;

(3) Career information brochures for mailing to interested young men who may make inquiries as the result of advertising and for placing in high schools throughout the nation;

(4) Cooperative efforts with various guidance groups and youth organizations in providing career

information on the textile industry;

(5) Arrangements for local follow-up of inquiries by local members of the AATCC;

(6) Arrangements for mills in various areas to participate in career days at high schools and to hold open house programs for interested young people;

(7) Use of various editorial services in providing information through newspapers and other periodicals;

(8) Activities to be carried out by textile colleges themselves to stimulate interest in textiles;

(9) Efforts to develop scholarships to assist deserving and qualified young men who are unable to attend college for financial reasons.

It is estimated that a director of this program could be maintained at an annual cost of about $25,000 covering salary, office, supplies, mailing cost, secretarial assistance, and other costs involved. The target for advertising expenditures for the first year for this man should be not less than $100,000, such expenditures to be paid either from funds raised by the committee or through efforts of the director in persuading various textile firms to expend some of their advertising budget on this matter.

While such a financial burden is too great to impose on any one organization and on AATCC in particular, it is felt that the necessary funds can be developed from other industry associations, provided the AATCC will take the lead in undertaking the effort required and possibly making an initial small contribution to implement the program.

The cost required can also be rationalized on the basis that the textile industry is now being called on to expend funds that it well should have spent in the past, and is making an investment against losses to be incurred in the future through the lack of adequate leadership.

In addition to the above, we prepose the following:

1. A joint meeting of association representatives, mill executives, and representatives from textile education to combat the general attitude of "no interest in textiles." This should come spontaneously from concerned mills, associations, and colleges.

2. A survey of textile education and the place of its graduates in industry.

3. Action to provide immediate career information on textiles to the high schools of the entire country. We hope AATCC will hold the lead in this program and soon have its career brochure released.

4. More active participation by industry executives in the advancement of textile education, not as a result of our pleading but as a result of enlightened self-interest.

If these four steps can be followed, other and no doubt better suggestions will evolve through the interactions of the groups working together. Textile education, like research, is not a thing apart from industry. It is of vital significance to industry—not a step-child, but a legitimate member of the textile family. Its problems are industry's problems and vice versa. All we are really asking is a positive, cooperative approach to mutual problems. We must, all of us, actively combat this public attitude of "no interest in textiles," and we cannot ourselves act as though we had no interest either.

You Can Take This Airplane with You!

AN INFLATABLE airplane that can be deflated and packed in the trunk of the family car has been flown for the first time at Goodyear Aircraft Corporation.

Designed and developed by the company to test the possibilities of rubberized Airmat fabric as

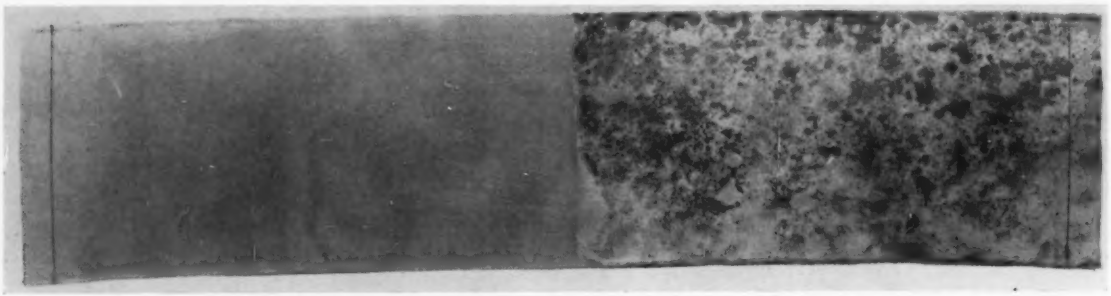
structural material for aircraft, the lightweight plane is made rigid by air pressure.

Wing, tail assemblies, and pilot's seat are made of Airmat material, a Goodyear Tire & Rubber Company product consisting of joined layers of inflatable rubber-coated nylon fabric shaped by thousands of droppable pile threads (described in TI for Jan. 1955, p. 153). The craft's conical-shaped fuselage is made of airship fabric.

Inflated, the plane resembles a glider with the pilot seated at the front of the ship. Deflated, it can be packed in a trunk. Less air pressure than that required to inflate passenger car tires is needed to pump up the plane.

The single-place, high-wing monoplane has a two-cycle, 40-horsepower motor mounted on a tubular support above the fuselage directly behind the wing. Only other metal support connects the wheels and pilot's seat with the fuselage. High - strength fan-shaped patches of rubberized material are used to attach the various members, struts, etc.

Until further development is complete, disclosure of additional information is not contemplated by the manufacturer. Quantity production is not planned.



CONTINUOUS WIDTH OF 16-OZ COTTON DUCK after two weeks burial in fertile soil at 80 F and 95% relative humidity. Left half was treated by the NCG preservative process; right half was not treated. Note the dark spots showing mildew attack and deterioration over all of the untreated portion while the treated part is entirely free from attack.

New Process for Long Term Preservation of Cellulose

A NEW process for the long term preservation of such textile materials as cotton, linen, rayon, burlap, and sisal—by chemical modification of the cellulose molecule—has been introduced by National Cylinder Gas Co. This preservative process differs from currently accepted preserving methods, the company said, in that only a simple treatment using a water solution is required, and this has a minimum effect on the strength and other properties of the product treated.

The treated fabrics can be dyed, washed, and otherwise handled as if untreated, and no odor, stiffness or stickiness is imparted to them by the process, according to the announcement.

The process is said to involve the use of a water solution of copper compound which is then treated to cause a fixed union with the material by chemical reaction of this copper compound with the cellulose molecule. A complex of permanently bound copper and cellulose results whereby the cellulose structure is modified in a manner so that, for example, viscose rayon cannot be produced from NCG* treated cotton by the xanthation process that dissolves ordinary cellulose. Furthermore, the treated cotton will not hydrolyze readily, even in concentrated hydrochloric acid which rapidly disintegrates untreated cotton. Moreover, the permanent chemical bond between the copper and cellulose is such that a prolonged washing with water or with ammonia will not remove the bound copper from the treated fabric. Consequently, fillers or binders are not necessary to protect the preservative from being removed on weathering.

The results obtained by the new process for prevention of mildew and other fungus growths are reported to be outstanding. Moreover, the results are achieved simply and without need for expensive auxiliary machinery. In fact, the process is readily adaptable to currently employed procedures and equipment in the textile industry.

According to the company, another highly desirable economic feature of the process resides in the use of a water borne preservative which eliminates fabric impregnation by means of expensive solvents. Of significance in this respect is the fact that the attendant fire and health hazards arising from the use of organic solvents are eliminated.

The new process has been under test and evaluation at the Southern Research Institute for over six years, the announcement indicated. Following are results of some of the experiments conducted at the Institute to determine the effectiveness of the development:

1. After seven months of weathering, the breaking strength of NCG preservative treated fabric

*Registered trademark of National Cylinder Gas Co.

was 20% greater than that of a fabric treated with another preservative, and more than 30% greater than the breaking strength of untreated fabric.

2. Artificial weathering for 200 hours with the Weather-Ometer produced no decrease in breaking strength of the treated fabric.

3. After 14 weeks of soil burial, breaking strength of the fabric treated by the new method was hardly decreased—it was nearly 95% as strong as before burial.

4. NCG treated fabrics have been tested in contact with humans and the results indicate that it is neither a primary skin irritant nor a sensitizer. Thus, it is possible to make mildew-resistant cotton garments from the fabric with no adverse effects on the wearer.

The natural color of fabric when treated with the new preservative is said to be changed to a tan or light brown color. If desired, however, the fabric can be brought back almost to its original whiteness by a simple process.

The preservative treated fabric will also take direct dyes and most vat dyes with no appreciable change in color from that of dyed untreated white fabric. Likewise, agents for other purposes, such as water repellents, flame retardants, resins, fillers or coatings, can be equally well applied to NCG treated fabric when desired.

Georgia Operating Executives Discuss Carding Problems

- Antistatics
- Picker Moisture Controls
- Large Sliver Cans
- Fire Control
- Cotton Conditioners
- Lap Controls
- Picker Maintenance
- Roving Frame Stop Motions

STAFF REPORT

APPROXIMATELY 200 operating executives of Georgia's textile mills met at the Harrison Hightower Textile Building of the Georgia Institute of Technology on April 21 to discuss problems in carding and spinning. Their questions and answers are here digested for ease of reading.

After the discussions were completed, an election was held to fill two vacancies in the association's executive committee. **S. E. Murdock,** Eagle and Phenix division of Fairforest Co., Columbus, Ga., was elected to fill the unexpired term of **McAllister Isaacs, Jr.,** of Bibb Mfg. Co., Columbus, who was elevated to vice-general chairman succeeding **George McMillan** who resigned. Elected to serve a full 2½-year term was **Willis S. James** of Summerville (Ga.) Mfg. Co.

Discussion leaders were: Carding — **Charles E. Rich,** manager, Callaway Mills Co., Milstead, Ga. Spinning—**Willis S. James,** superintendent, Summerville (Ga.) Mfg. Co. General Chairman **J. Alex Fife,** superintendent, Scottdale (Ga.) Mills, presided.

Antistatics. The majority of the reporting mills running synthetics prefer an oil-base antistatic. One mill applies the fluid in a tinting machine just prior to the picker hopper; another in the feed hoppers in the opening room. Two others prefer to introduce it at the picker hoppers.

All mills agree that an excess causes loading at the cards. Since the amounts applied range from one-tenth of one per cent to eight-tenths of one per cent, the definition of "excess" seems to be a local problem. One plant prefers to apply a wax type at the winders, as well as using the oil in the opening room.

The advantages appear to be, in all cases, a reduction in fly and a reduction in laps at the fly frames and spinning frames. One mill reports an increase in moisture control accuracy.

Moisture Control. Three mills report that electronic moisture measurers on pickers give them added sensitivity. Yarn weights are kept so uniform that spinning gear changes are greatly reduced. No instrument maintenance problems are experienced.

At least one plant finds them quite valuable in determining the moisture content of raw-stock-dyed coton. Now their picker room operatives do not hesitate to send an under-dried mix back to the dryers.

Large Sliver Cans. The majority of the reporting plants have

Left to right: **A. C. Reynolds** of Covington (Ga.) Mills; **Hugh Smith** of Watson & Desmond; **J. H. "Chris" Canady** of Product Sales; and **Cecil McAbee** of Dixon Corp.

Group from Canton (Ga.) Cotton Mills (l to r): **James Hammond, E. E. Price, A. D. Weaver, W. A. Whitmire,** and **Randall Bagwell.**

Left to right: **Emmett Fullington** and **George Malone** of Exposition Cotton Mills; **W. H. Wolfe** of Martha Mills; and **Clyde Norrell** of Crystal Springs Bleachery.

Left to right: **F. J. Brown** of Coats and Clark (Acworth); **John H. O'Neill** of Dary Ring Traveler Co.; **J. S. Gammon** of Summerville Mfg. Co.; and **James H. Dean** of Anchor Rome Mills.

Left to right: **F. T. Thrasher** of Chicopee Mfg. Corp. (Gainesville); **E. W. Jordan** of Exposition Cotton Mills; **Fred Ridenour** of Draper Corp.; and **W. R. Otey** of Chicopee (Gainesville).

Group from **Covington Mills** (left to right): **John W. Brown, Neal Sammons, J. C. Evans,** and **J. I. Alford.**

changed to 14″ x 36″ cans. Their weight increases per can range from 32 per cent to 50 per cent. None reports any materials handling problems incident to the changeover. **Mill E,** which has gone to 16″ x 36″ cans, enjoys an increase of 150 per cent in weight per can and does not report any handling troubles.

Maintenance costs, as a rule, do not rise after the changeover. However, **Mill B,** which has converted can tables without changing coilers, has had an increase.

Operating executives are slightly in favor of buying the changeovers in complete units. Some have experienced difficulty in getting the desired coil pattern from their own units, and assume that purchased packages will not pose that problem. Others, under similar conditions, have no such problems.

The use of 18″ x 42″ cans is still in the formative period. It appears that a can of that size will require some type of conveyor system and spring bottoms.

Fire Control. Of the 21 mills discussing their fire control problems, 13 list tramp metal as a factor. The odd bits of metal are introduced from the mix, from sweeps, and from machinery parts breaking while running. Only two mills have had fires resulting from the steel hooks which are used to mend cut or torn bagging.

Sentiment on the use of magnets is about equally divided between the permanent and the electromagnet varieties. The location of these safeguards varies from plant to plant, but all plants use them as early in the opening process as local conditions permit.

Fire fighting equipment varies in type and in quantity.

Carbon tetrachloride, soda-acid, and dry powder are most frequently mentioned. Each uses water applied usually with a spray or fog nozzle.

Cotton Conditioners. Seventeen mills were involved in this discussion. One reports being in an experimental stage and reserves judgment. Another uses no conditioners. The remaining fifteen use an oil-type conditioner.

Eight of the plants introduce the oil in the opening room and usually while the stock is confined to a hopper or feed apron. **Mill P** prefers to inject the conditioner into the opener lines. Five mills apply the oil either in the pickers or just prior to the pickers.

The quantity of oil used varies from one-tenth of one per cent to three-tenths of one per cent. However, the majority of plants use two-tenths of one per cent or less.

Lap Controls. A very small majority of the 13 mills involved

Six-Month Picker Maintenance Check List (Mill B-2)

1. Run out all stock.
2. Remove all belts.
3. Remove cheeks.
4. Remove calender rolls (smooth and fluted).
5. Remove cross drive shaft.
6. Remove drop shaft.
7. Check, repair, or replace all worn bearings and gears.
8. Replace all parts after cleaning—check for freedom and level.
9. Oil all bearings, check for freedom and meshing of gears.
10. Check front screens and bearings.
11. Check draw rolls and bearings.
12. Check air control doors to determine proper seating.
13. Check mote knives and fly bars.
14. Check damper and fly bars to insure proper flow of air.
15. Check fan shaft and bearings, balance of fans.
16. Check ball bearings on beater and fan shaft.
17. Open box on piano motion.
18. Check lift pins and plates for freedom.
19. Check feed rolls, evener rolls, and bearings.
20. Check beater lags, and settings to feed rolls.
21. Check evener cones and belt, belt guides and bearings.
22. Check underneath cones and slides that drive back section.
23. Clean and check synchronizer for freedom and smooth operation.
24. Repeat operation for back section.
25. Check feed aprons to back feed rolls.
26. Check feed hopper bearings, shafts, and aprons.

have seen no improvement in lap uniformity on those pickers running with pneumatic lap controls. This majority is made possible only by two mills having kept no records, and by one mill which remained noncommittal.

Maintenance costs have decreased in one instance, and in all other cases have not been observed to rise. Twelve of the thirteen have not put ball bearings on their calender rolls. All thirteen use a pneumatic system with the pressure applied to the calender rack. **Mill M**, which runs a 14.67-oz lap (57 yd) under 50 psi pressure replaces fewer loggerheads with the pneumatic system.

Mill J uses a special air compressor to supply 75 psi pressure to the racks. One other mill uses the same pressure figure. The pressures used, however, go as low as 40 psi but group around the 50-lb figure.

Picker Maintenance. Georgia mills recognize no set pattern of picker maintenance. Each plant must meet its own problems of dust, humidity, speeds, cotton grades, excess or scarcity of picker capacity, etc., with a maintenance program to fit local conditions. The variety of overhauling schedules runs from "as needed" through periods of 30 weeks, and 3, 4, 6, 9, and 12 months. Since the largest group appears around the six-month period, a detailed study of a typical six-month check list is given in the box above.

Roving Frame Stop Motions. The electrical stop motion bears the unanimous approval of the eight mills reporting. Its benefits include fewer gouts, fewer "break backs," fewer doublings, and fewer "fly-overs." There is a scarcity of waste records, but the trend is downward. **Mill B-2** reports a reduction of approximately 23 per cent.

Production and efficiency records vary. **Mill B-2** suspects an increase in efficiency but lacks records. **Mill E** has noticed a marked increase in production and efficiency. **Mill K**, having only one frame so equipped, reserves judgment. **Mill M** feels an increase in both is obtained. **Mill O** is using both the electrical and the broken end types and has no doubts that quality has improved with both systems. **Mill Q** has not noticed any difference. **Mill R** has installed the electric type on four new frames and naturally feels that a comparison on that basis would be misleading. However, Mill R is pleased with the operation and improvement in quality.

Two plants report an increase in job loads. Two report no increase, and the others remain noncommittal. **Mill N** increased job loads from 204 spindles to 272 spindles.

(Spinning discussion will appear in an early issue.—The Editors)

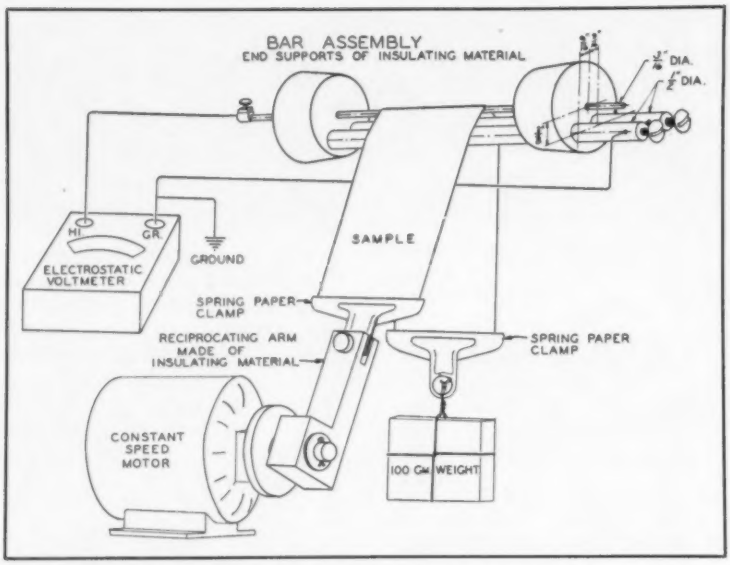
Need a Static Generator for Testing Fabric Properties? Build This One

TECHNICIANS in the textile laboratory of Atlas Powder Co were faced with the problem of determining which of the antistatic agents marketed by their company are most effective for the various types of fabrics requiring treatment to prevent build-up of static electricity. If they had some means of measuring the amount of static generated on a fabric, their problem would be solved.

The static generating apparatus shown in the accompanying illustration is the result of their investigation of the matter. Construction details are presented here for the information of those who have need for similar equipment in their own laboratories.

The Static Generator. There are three principal components, as indicated in the schematic drawing: (1) the constant speed motor equipped to provide reciprocating motion to the sample fabric; (2) the bar assembly on which the specimen is rubbed; and (3) the electrostatic voltmeter which indicates the amount of static generated on the fabric.

The electrostatic voltmeter utilized in the Atlas laboratories is



STATIC GENERATOR developed in Atlas Powder Co. laboratories.

designated Model ESD by the manufacturer, Sensitive Research Instruments Corp., Mount Vernon, N. Y., with a range of 0 to 2000 electrostatic volts.

The bar assembly consists of two ½" magnesium alloy bars placed parallel with centers 1⅛" apart and one 3/16" brass bar parallel to and between the magnesium alloy bars but ½" above. The brass rod is insulated from the magnesium bars by the two end supports which are made of insulating material.

The magnesium bars are connected to the "ground" terminal of the electrostatic voltmeter and also to the ground. The brass bar is connected to the "high side" terminal of the voltmeter.

Atlas technicians state that they have found no suitable insulation for the wire leading from the brass bar to the high side, but have located the wire in such a way that it is as far from all other conductors as is possible.

Static Testing Procedure. The test fabric is washed in an aqueous solution with a synthetic detergent in order to remove any sizing materials that may be present. It is then rinsed thoroughly in distilled water to remove all traces of detergents.

A test specimen 12 inches by 1½ inches is cut from the fabric. After drying, it is placed in a conditioning cabinet that is at 30% rh for at least two hours. It is now ready for treatment in the antistatic solutions.

The test pieces to be treated, as well as the control, are removed from the cabinet and immersed in the antistatic solutions as desired with standard agitation for the time specified. They are extracted at 3600 rpm in a centrifuge basket with a 5-inch diameter for 1 minute, removed, and hung up to air-dry (oven dried tests may be used when necessary).

After drying, specimens are placed in the cabinet at 30% rh and left there for at least 24 hours. They are then removed and tested immediately on the static generating apparatus.

One end of the test piece is clamped to the reciprocating arm, the other end to a 100 gram weight, and suspended over the bar assembly. The reciprocating arm drives the fabric 100 cycles per minute through a distance of four inches.

The electrostatic voltage reading is recorded every thirty seconds for a three-minute period.

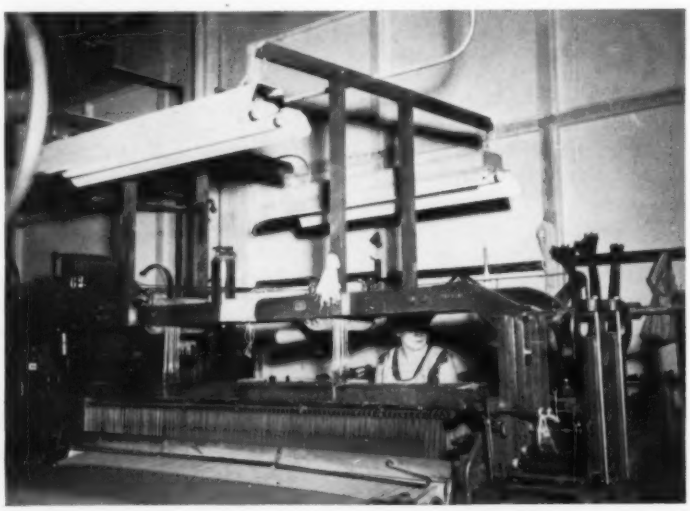
How to Get More Light at Looms

STAFF PREPARED

EXCLUSIVE

LIGHT intensity at the looms has been doubled and shadows from loom members have been reduced in a New England worsted mill by installation of fluorescent light fixtures on brackets attached directly to the loom arch as shown in the accompanying photo.

Note that there is one fixture at the front and one at the back of the loom to increase the efficiency of the weaver.



Covers on Woolen Cards Improved Quality and Cut Waste

Contamination of stock dyed wool was eliminated and fly waste was cut in half when covers were installed on 84" woolen cards.

STAFF PREPARED

EXCLUSIVE

MANETTA MILLS, Lando, S. C., found that card fly contaminated different colors of stock being run in the card room. In processing dyed raw stock, this condition created a problem in maintaining quality.

Running dry stock created more of a problem with fly than wet or emulsion treated stock. The centrifugal force of rotating card parts tends to throw fibers out, and management concluded that covers should be provided to keep the fibers in the card.

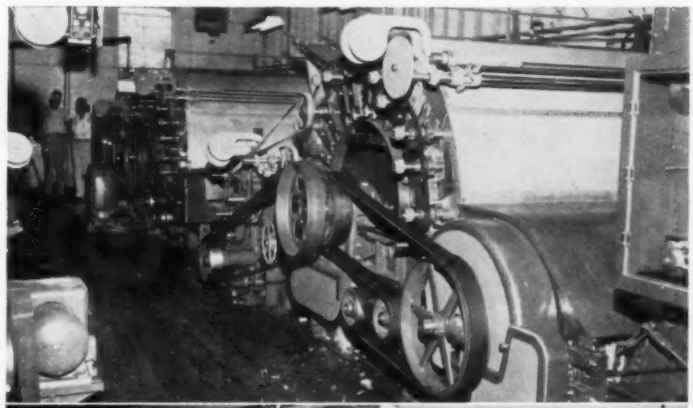
Upon installing two 84" woolen cards in the same room, the total production of both cards each week amounted to over 30,000 pounds.* In this instance nylon, rayon, Asiatic cotton, and garnetted wool stock are processed in blends.

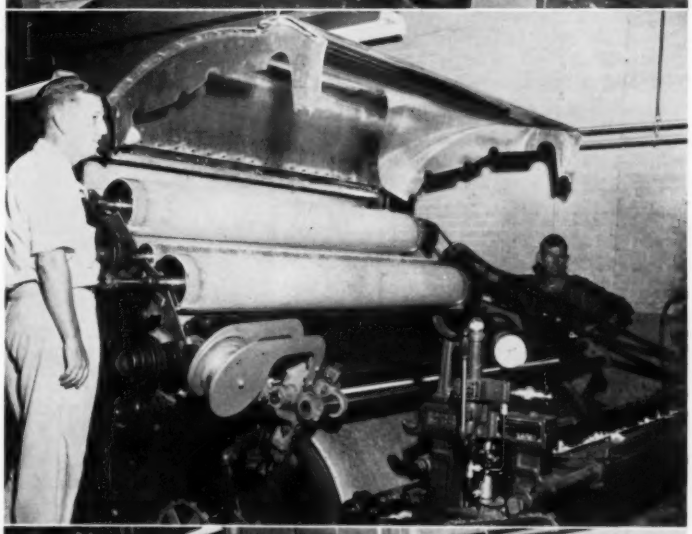
Fiber Migration Stopped. The woolen cards at Manetta were totally enclosed with covers made of light alloy metal. The covers were supplied by the card manufacturer.

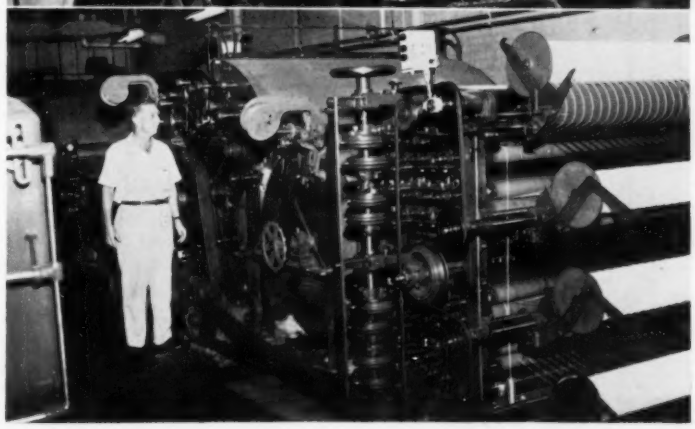
In this installation the covers were not painted because the smooth surface of the bright metal is easy to keep clean and readily shows any collection of foreign matter; however, the covers may be easily painted later if the management should so desire.

The installation of covers solved the problem of colored stock migration in the card room.

Additional Benefits. The metal enclosures were attached to the cards to reduce air drafts and to cover fiber contact and transfer points, such as workers, strippers, and cylinders, primarily to prevent colored stock from migrating to







*See TEXTILE INDUSTRIES for September, 1954, pp. 144-147.

the adjacent card in the form of fly. However, in actual use the covers were found to reduce the amount of waste in the form of fly by two per cent; this type of waste previously had amounted to about four per cent.

By cutting fly waste in half, the investment in covers was amortized in approximately three months and thereafter netted a two per cent return in savings on the investment, according to Harry Heath, superintendent. This mill is well pleased with the results achieved by using card covers, and the operatives are favorably impressed too.

The principal covered parts on the cards are as follows:

(1) Top and bottom of breast are covered.

(2) A solid grid is provided under the tumbler.

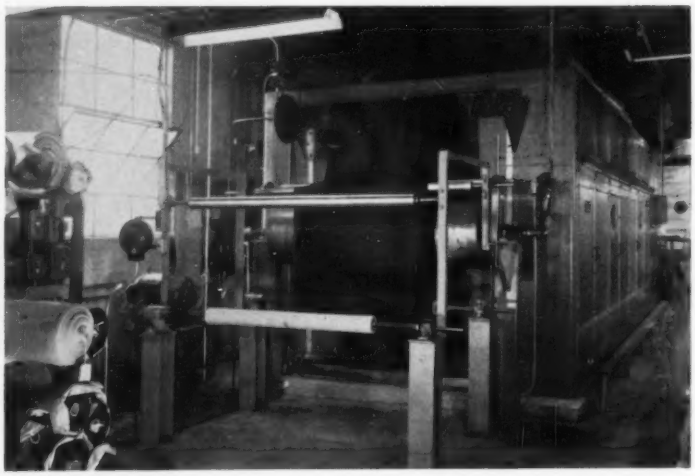
(3) A semisolid screen is provided under the first breaker cylinder.

(4) The finisher tumbler is equipped with a solid cover on top and a screen on bottom.

(5) The finisher cylinder is covered on top and gridded on bottom.

Roller Curer Helps Finisher Streamline for Profits

Continuous flow combines with new curer to more than double output and provide better finishes at less cost



DELIVERY END of the new Proctor & Schwartz roller curer at Oxford Textile Finishing Co. Occupying only 280 sq ft of floor space, it is of the "W/M" construction which reduces installation costs and provides an efficient, air-tight, and well insulated housing with smooth, easy-to-clean surfaces. Turbo fan offers improved air distribution which promotes even, controlled curing without shading.

THE PROGRAM of streamlining and modernization recently completed by the Oxford Textile Finishing Company, Oxford, N. J., is an example of the opportunities that exist for today's alert textile finishers.

At Oxford, installation of a new Proctor & Schwartz roller curer, combined with the rearrangement of existing facilities, has resulted in 35% higher cures with production increased from 50,000 to 105,000 yards per day—literally doubled overnight! In addition, Oxford reports that the new system enables the production of a wider range of better quality finishes. Cost savings are made also through reduction in labor, less waste, and more efficient chemical consumption.

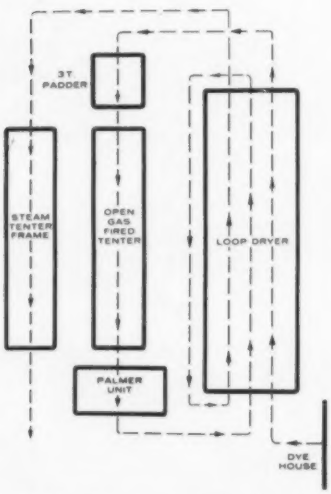


FIG. 1. The old equipment layout. Dotted line shows how goods moved through the machines.

The Old Flow Pattern. Prior to installation of the new equipment, Oxford faced a difficult problem. The bulk of the company's production was in the 50-60 lb class, largely gabardines and flannels, for crease-resistant, water repellent outerwear.

Because of changing consumer preferences, demand was swinging sharply toward finishes made with the new, highly durable, abrasion-resistant silicones and other thermosetting or thermoplastic synthetic resins. These new resins were not only more costly, but more difficult to apply and cure, compared to earlier wax base finishes. Extra high temperatures and critical processing factors taxed the ability of existing equipment.

Early attempts to obtain good cures were hampered by this inadequate equipment, excessive handling, due to the criss-cross

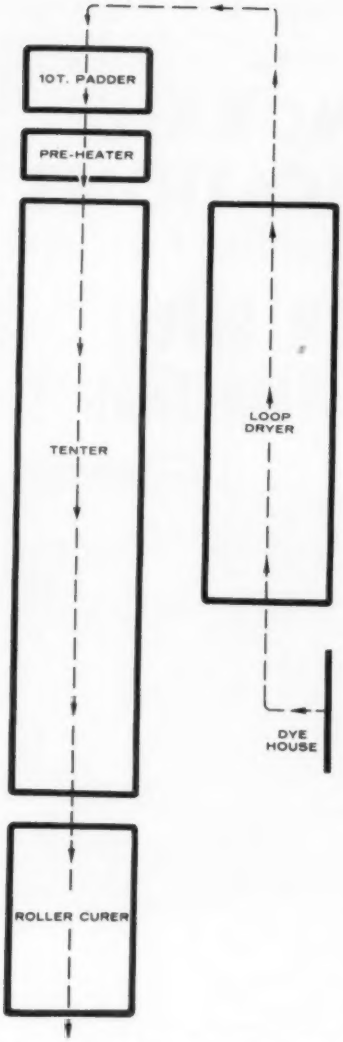


FIG. 2. The new equipment layout. Note simplified flow plan.

CHECKING controlled finishes is J. W. Knapik, chief of operations at Oxford.

flow pattern. **Fig. 1** illustrates this complicated flow pattern as it existed at that time.

Difficulties were encountered at the 3-ton padder whose pressures were insufficient for correct impregnation of the silicones into the fibers. At the next stage, an open burner tenter gave uneven drying, uncertain operating temperatures with 200 F limit, and consequent low speeds.

Replacement of the Palmer blanket rolls alone amounted to $8,900 annually. The use of these blankets has been entirely eliminated.

Two passes were required in the loop dryer, one for drying and one for curing. These passes and repasses were not only time consuming and costly, but interfered with the normal flow of other goods coming from the dye house to be dried. Finally the much-handled cloth had to be framed out with steam to restore the width lost in the dryer.

The maximum output of this old system was 50,000 yards per 24 hours, and the existing arrangement was economically unsound and drastic action had to be taken.

The New. The new flow pattern is illustrated in **Fig. 2.** Note the simplicity and straight-line, continuous flow. Beginning with a 10-ton padder to secure proper impregnation, the fabric moves through squeeze rolls and preheater to a clip tenter frame where it is dried on one pass.

Continuing its straight-line flow, the cloth then moves to a roller curer. The new curer assures uniform curing through uniform air circulation and dual heating stages, which can be pre-set. Motors are synchronized to maintain curing speed, and tension of the fabric can be adjusted from minimum to maximum while the machine is in operation according to the requirements of the fabric being cured.

In the roller curer alternate top rollers are powered by shaded pole motors to convey the cloth with controlled minimum tension through the curing stage.

According to J. W. Knapik, chief of operations at Oxford, experience is an important factor in obtaining a good cure, and equipment must have the versatility and flexibility to respond quickly in control as dictated by the fabric's mill variations, moisture content, etc.

Mr. Knapik also states the roller curer produces 85-95% cures. This maximum cure means that there are no uncured resins in the fabric, again saving handling costs, as well as producing a higher grade fabric.

Garments made from fabrics finished in this machine are said to have an appearance which is superior to the appearance of garments processed by older methods.

Average running speeds on the new curing line average 35,000 yards per shift, or 100,000 to 105,000 yards per 24 hours, with peaks sometimes reaching as high as 113,000 yards. This is not only twice as fast as the previous method, but the entire finishing operation can be handled by a considerably reduced labor force. The new equipment will more than repay the initial investment in a short period.

An important adjunct to this high speed finishing line is Oxfords' quality control system. Tests

use

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for

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MONORAIL TRACK

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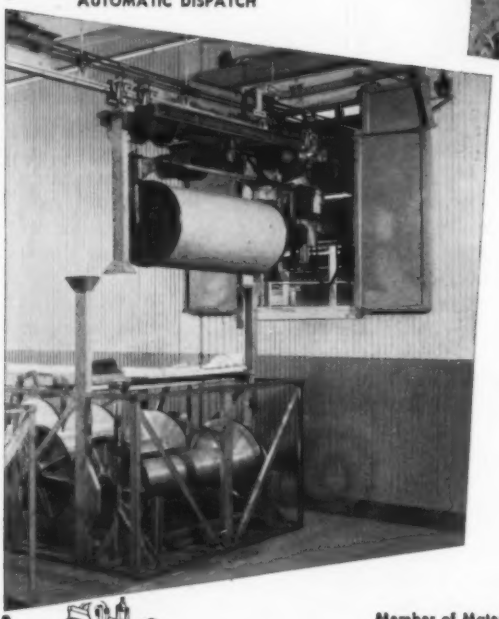
AUTOMATIC DISPATCH



By following the guide prepared by members of the MonoRail Manufacturers Association when purchasing materials handling equipment, you are assured of getting maximum safety and minimum maintenance and still satisfy your operating requirements.

The guide represents the efforts of the combined experience of all the engineers of the association members. The specification guide has just been published.

A copy of these specifications will be forwarded on request. Write also for a copy of the American MonoRail Bulletin C-1 describing hundreds of successful solutions to handling problems.

Member of Materials Handling Institute — MonoRail Association

AMERICAN OVERHEAD HANDLING EQUIPMENT

MONORAIL COMPANY

13106 ATHENS AVENUE
CLEVELAND 7, OHIO

[IN CANADA—CANADIAN MONORAIL CO., LTD., GALT, ONT.]

with laboratory accuracy must be performed and results posted quickly. Delay in test results could mean thousands of dollars waste in short periods. Tests include wrinkle recovery, water repellency, wash, odor, and many others.

John Gambino, secretary of the corporation and in charge of sales, stated that as a result of increased customer confidence in the quality of the finished product, sales have more than doubled since the plant modernization has taken place.

Are You Considering Spinning Modernization?

These pointers may help you get more for your money . . . .

BY ROBERT E. POMERANZ
President
Roberts Company

EXTRACT*

A PREFERRED order of importance of the various elements which should be considered in a spinning modernization program has come to light as a result of our experience with and observation of a large number of textile mills where such programs have been undertaken.

First of all, attention should be given to the drafting system. This is the basic channel which affects yarn quality, and it is the foundation on which you must build the opportunities to reach better yarn quality, higher front roll speeds, larger roving and spinning packages, reduced ends down, higher spindle speeds, and higher spinner job loads. Usually dollars spent in drafting system modernization will provide the quickest return.

Second, mills should consider ball bearing spindles, cylinders, tape tension pulleys, and all of the related items. This would provide an increase in the size of the package as well as increased cylinder and spindle speeds, plus many other benefits.

Third, a new open-type creel should be considered, especially where roving packages are to be increased or where full bobbins cannot now be used, and for the added benefit of substantially reducing cleaning.

Fourth would be a consideration of suction cleaning in order to permit the maximum drafts available from the modernized drafting syetem and to achieve most satisfactory spinner job loads.

Hand in hand with these four major steps should come the scrutiny which every wide-awake mill, even one not modernizing, must give to its rings, to building the bobbin, and to control of oiling procedures and other similar standard maintenance items. The cost to improve the bobbin build through an overhaul of the lay driving gears, cam and cam shaft, builder motion, Pitman roll, chain pulleys, and traverse connecting rod pins is so small per spindle that no alert mill can overlook it. Also the use of a one-shot oiling system, hardened studs and hardened gears in the head, and other related items are a "must" if the basic spinning frame is worth anything at all.

Fruits of a Spinning Modernization Program. You can make up your own list of what you want from such a program: higher front roll speeds, more sides per spinner, reduced ends down, higher break factors, better non-uniformity, larger roving packages, or you can wrap all of them up in five words "lower costs and better quality."

It is our practice to check monthly various installations of our equipment in the mills to determine first of all what the current trend is on performance and secondly to see how our equipment maintains consistency of this performance. In presenting the figures in the accompanying box, we should point out that mills equipped with spinning moderni-

*From a paper presented by Mr. Pomeranz at the spring meeting of the Eastern Carolina Division of the Southern Textile Association in Raleigh, N. C.

SPINNING MODERNIZATION PERFORMANCE RESULTS

Sheeting and Print Cloth Warp Yarns
Results obtained week of April 2, 1956

	Print Cloth		Sheeting		Carded Sales Yarn	
Mill	**A**	**B**	**C**	**D**	**E**	**F**
Yarn Number	31½	31½	21½	21½	21½	20
Hank Roving	.70	.60	.72	.55	.55	.66
Package Size	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6	12 x 6
Draft	45	52	30	39½	39½	30½
T. M. Yarn	4.07	4.15	4.22	4.23	4.21	3.50
RPM Front Roll	144	148	165	148	163	168
Break Factor	2340	2210	2285	2200	2253	2300
Non-Uniformity	95	93	65	64	64	62
Ends Down	26	23	29	22	31	20
Spindles per Operator	3480	3300	1656*	3000	3036	2912
Suction Cleaning	yes	yes	no	yes	yes	no
Frame Gauge	3¼	3½	3½	3½	3½	3
Diameter Ring	2	1⅞	2⅛	2¼	2	2
Tube Length	9	9½	10	9½	10	9
Drafting System	Roberts	Roberts on Roth	Roberts on Roth	Roberts on Cas.	Roberts on Cas.	Roberts on H&B
How Long Installed	1½ yr	3 yr	1¾yr	3 yr	5 yr	1 yr

* On this installation, spinner does all cleaning

zations supplied by other manufacturers should be able to achieve equivalent results.

Three yarn types are represented in this particular survey—print cloth warp yarns, sheeting warp yarns, and 20s carded sales yarn. Those of you who run these numbers can easily write your figures along side these results for comparison purposes, and mills running other constructions might project these figures to their own jobs.

In presenting results such as these, it must be pointed out that many factors affect the performance from one mill to the next. Of course, roving preparation is most significant, but many other factors such as condition of the rings and front bottom rolls, type of humidification system and overhead cleaners, long draft cleaning cycle, and other similar items would provide a big difference from one mill to the next. The importance would come in how a specific operation was improved.

Typical of the improvement being realized in many mills today are the following results which were achieved after management of a mill with an output of 83,000 pounds per week of 80 square and 64 square print cloths had the spinning frames completely modernized:

It was possible to reduce the working force by 48 people.

A reduction in roving inventory was achieved due to elimination of one roving process.

An increase of about 10% in total yarn output is being obtained, although wider gauge frames are being used.

Output of baled cloth will run approximately 10 pounds per man-hour in opening and picking through the cloth room.

Yarn output will average 3 pounds per spindle per 120-hour week.

Taxes and Tyranny

"When there is an income tax, the just man will pay more and the unjust less on the same amount of income." . . . . Plato

BY RINGGOLD ARDEN

EXCLUSIVE

IT IS gratifying to know that the National Association of Manufacturers has started an active crusade to rectify some of the unjust and oppressive features of our crazy-quilt national tax system This system seems to have grown up according to the philosophy of plucking the goose which squawks the least.

The two worst features of our present national tax structure probably have to do with the corporation taxes and the graduated income tax. The corporation tax is nothing but a disguised sales tax and the progressive income tax is a device long employed for the destruction of the creative and thrifty.

Anyone who thinks that these problems are something which have suddenly blown up out of a clear sky can find that about 2400 years ago Plato had some interesting comments to make on this subject in addition to the one just quoted, and many of the other ancients had plenty to say about the very things with which we are wrestling today. Taxation is one of the prime instruments of tyranny, and in *The Republic,* Socrates is reported as saying with respect to the tyrant,

> "Has he not also another object which is that they (the people) may be impoverished by payment of taxes, and thus compelled to devote themselves to their daily wants and therefore less likely to conspire against him?"

This principle of destruction through taxation was strongly advocated by Karl Marx, the chief founder of modern socialism. Marx and his followers have also advocated governmental assumption of the responsibility for the welfare of the individual, but there was nothing new about this proposition, which had been repeatedly tried long before the time of Christ. The famous Greek orator, Demosthenes, said,

> "Like the diet prescribed by doctors, which neither restores the strength of the patient nor allows him to succumb, so these doles that you are now distributing neither suffice to ensure your safety nor allow you to renounce them and try something else."

About the same time Menander remarked,

> "The man who first invented the art of supporting beggars made many wretched."

These are merely samples of comments from way back yonder, illustrating the fact that nations have a tendency to drift into the same governmental errors in age after age.

One of these errors in our case is creating the delusion in the minds of millions of persons that somebody else is paying the taxes. There is probably nothing so dear to the politician's heart as a tax scheme which extorts money. while creating the impression in the mind of the extortee that somebody else is paying his taxes. The corporation tax is an ideal example

A government which lacks the courage to impose a direct tax, which the taxed person can recognize clearly and resent furiously, can require a corporation to charge more for its goods and services and turn this money over to the government, so that the real taxpayer blames the corporation instead of the government for the exaction. The typical taxpayer, not know-

(Continued on page 185)

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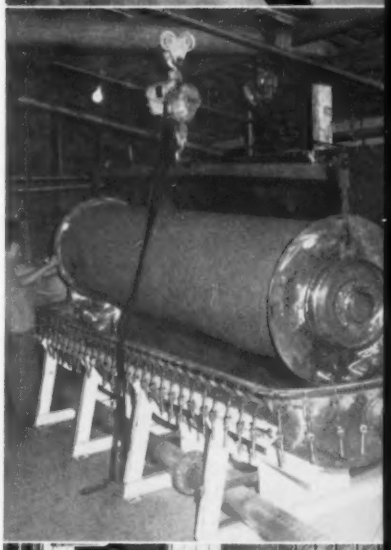
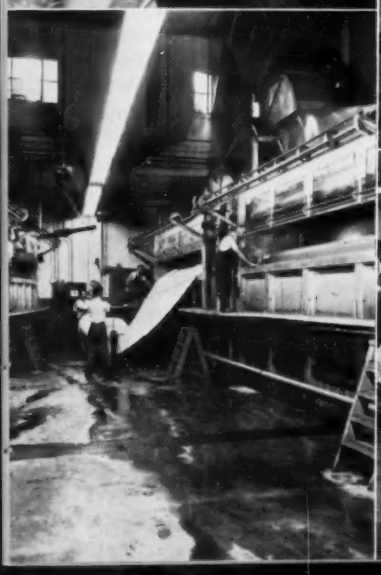
Tufted Textiles 1956

THE WIDE interest aroused by the objective study of the tufted textile industry which TEXTILE INDUSTRIES made last year has prompted the editors to expand the original story and to take a closer look at certain aspects of the industry.

Following last year's method, the editors interviewed tufted management and others closely connected with the industry; their advice has guided the preparation of this second study. Departing from last year's procedure, part of this special section was written by prominent persons within the tufted textile industry, and is published under their by-lines.





Tufted Textiles — Progress and Problems

BY EUGENE T. BARWICK
President
E. T. Barwick Mills
and
President
Tufted Textile Manufacturers Association

EXCLUSIVE

RECENTLY one of New York's leading financial editors cited the tufted textile industry as the fastest growing industry in America. He based his statement on a Bureau of the Census report that, as of December, 1954, our industry was forty-seven per cent ahead of the previous twelve-month period.

Forty-seven per cent volume increase for any industry, even uranium mining, is nothing short of spectacular, says this financial writer. I am inclined to agree. But gratifying as this figure is, it is topped by the Bureau's latest report, which shows that manufacturers' shipments of tufted rugs and carpeting during the first half of 1955 were up sixty-seven per cent over the comparable period of 1954.

The healthy aspect of our growth is that it has not all been made at the expense of some other industry. It is true that the general trend in floor coverings has been away from woven goods and strongly in the direction of tufted goods. But the fifty or sixty million square yards of tufted goods manufactured last year is in addition to another fifty-odd million square yards of woven goods. And it must not be overlooked that when tufteds first became real volume in the floor coverings field, scarcely six years ago, the United States was only buying about fifty million square yards annually of all types.

Although percentage increases in the future may not be as spectacular as those in the past, the outlook is bright. Today more homes are being built than ever before in America's history. Our population is expanding, we have more people employed, we have higher per capita income, and we have greater consumer credit, despite a very large consumer indebtedness for time payments. And remember, the average American home has only three square yards of floor covering of any type, so the potential is enormous.

You've Still Got to Sell. Not all segments of the tufted textile industry are enjoying this growth. Some parts of the industry have grown in spite of themselves, and when confronted by healthy competition from merchandise better styled and marketed have found that competition a little too keen.

Even in today's prosperous and expanding market you still have to produce the best product of which you are capable, and you still have to make your customer buy your product. Today that means that the customer must not only be sold, but must be presold.

The trend in modern merchandising is increasingly toward self-selection or self-service. At the retail level, seventy per cent of all goods sold today is sold through these methods. Retailers like and encourage self-selling — it cuts down expenses, and increases volume and profit. Retailers are basically interested in any product that requires no selling on their part. If you send presold customers to their stores asking for your product, that's the one they'll buy.

Money is plentiful and it looks as if it will be for some time to come, but your customer still has to be presold before your salesman reaches him. If you sell to a manufacturer, your customer has to be seventy-five per cent presold; if you sell via retailers to the consumer, both retailer and consumer have to be one hundred per cent presold.

As an important part of preselling, we at E. T. Barwick Mills are strong believers in the written and spoken word. Our executives frequently guest on television shows where floor coverings are discussed, and we participate actively in all the local, regional, and national meetings of our industry. Additionally, we do an increasing volume every year of consumer advertising and product publicity, perhaps as much if not more than floor covering manufacturers of volume much greater than our own.

The weakest spot in the whole scheme of marketing today is the retail store sales person. Most of them are not overpaid, most of them are undertrained, and most of them are, naturally, somewhat undeveloped in actual understanding of the products they are called on to explain and persuade the customers to buy.

In the ten thousand-odd stores through which our products are sold we try to maintain a good relationship with the floor covering retail sales people. Through regular mailings to about forty thousand such individuals we try to tell them what we're doing, what is new in the industry, and the very simple things about the care and maintenance of rugs and carpets. I think it has paid off, as a vital part of our preselling.

Public Relations. No major industry has the moral right to allow itself to be unexplained, misunderstood, or publicly distrusted, for by its unpopularity it poisons the pond in which we all must fish.

As U. S. industry has outgrown the proprietor-owned and operated companies of old, and as organized labor has gained in strength, more and more corporations have recognized the need for being understood by their employees, stockholders, and the public at large, yet the sad fact is that industry has lost ground in its public relations.

Seven years ago a national concern conducted a survey to find out which groups were thought to be doing the most good for the nation—religious, business, govern-

mental, congressional, or labor Business garnered 20% of the votes, second only to the religious, which garnered 34%. But when this same survey was made in 1954, business slumped from 20% to 10%, while the religious groups rose to 40% and government jumped from 11% to 18%.

On the question of who was doing the least for the country, business, which got only 6% of the votes in 1948, got 9% in 1953.

One trouble is that industry frequently waits until it is in trouble before doing something to mend the fences. We are usually so preoccupied with making and selling things that we often fail to recognize developing public relations problems until it is too late.

The tobacco companies had known for some time that studies on the connection between cigarettes and cancer were being made. But they waited until the results were publicized and sales started to fall before getting together to make their own tests. The steel companies are another example; every boost in the price of steel since the war has been followed by a hue and cry, even though the price had risen only 85% since 1939, compared with a 120% rise in all commodities in that same time. But the steel industry did little to take its case to the public.

Many companies fail to realize the difference between press agentry and public relations. Press agentry is usually a one-shot attempt to get a story in the papers. Public relations is a long, continuing campaign, aimed at molding public opinion on a broad basis for the benefit of an industry or company.

Many years back the Libby-Owens-Ford Glass Company's sales began to slip. By a plan of good public relations, architects began plugging for more glass in houses, books were written on glass, which stressed the safety of more visibility both in automobiles and in homes. Now there's a shortage of plate glass.

Industry's Responsibilities. Man does not live by bread alone, nor does industry discharge its obligations by manufacturing and selling alone. Industry has very specific obligations to its people, to its community, and to the general welfare of the nation, which may no longer be regarded as anything more altruistic than good business practices.

The growth of our industry, its accomplishments, our confidence in the future, are all results of our free enterprise system. Let us reevaluate the meaning of free enterprise in terms of social and community responsibility, and of industry responsibility. If we as an industry fail in these respects, we will not grow, we will not hold our own, in fact we will in all certainty have no future at all.

Companies in our industry, and I will speak candidly, have a tendency to shrug off their obligations to support the schools, the churches, the hospitals, and other essential community services which are all a part of the price and the privilege of being an employer. No manufacturer or business proprietor can isolate himself from community affairs and community responsibilities.

Unless I miss my guess we will of necessity become very much interested in our community every day of the year, with particular respect to its social complexities and to its political ones as well, the type and beliefs of persons you elect to your city, county, and national offices, and I do not mean simply whether they are Democrats or Republicans. I am sorely afraid that we are too far in arrears on that score already. There's a lot of inventory-taking due in that particular area.

Regardless of that wonderful, life-giving something called "strong consumer demand," at the other end of the line our industry can be stopped dead in its development if it does not have a steady stream of competent, intelligent, loyal workers. I candidly feel that we are doing far too little to attract and to hold onto our young people. And, believe me, there *is* such a thing as vegetation in an industry that grows up and expires with one generation of management or one group of workers.

Now is the time to attract these people on whom we must depend for our tomorrows. Now is the time to stop thinking of our businesses as something belonging exclusively to us, something we could close up tomorrow if we chose—and take off with the cash. We have responsibilities, and whether we like it or not, we have to face them—or someone else, willing and able, will carry on both our businesses and our responsibilities for us.

During the past few months there has been considerable reexamining of employer-employee relations, and some improvements

Leader of the Carpet Revolution—About the Author

Eugene T. Barwick, termed last month by *Fortune* the man most responsible for the revolution which tufteds have caused in the carpet industry, is a relative newcomer to tufted textiles. Until mid-1948 he was with Sears, Roebuck, which he had served as a buyer in floor coverings and assistant to the Atlanta territorial vice-president since his graduation from the University of North Carolina in 1936.

Soon after leaving Sears, Mr. Barwick started his own business with $4,500 capital, and his rapid parlaying of this original stake into a multimillion-dollar business is the classic story of success in the tufted textile industry.

Mr. Barwick began operations for himself by selling tufted cotton carpets produced by a subcontractor, but soon established his own plants. Sales the first year were just short of a million dollars (all of which he secured personally), but rose by leaps and bounds with expansions and acquisition of other companies. In 1955, E. T. Barwick Mills, of which Mr. Barwick is still sole owner, produced 13,500,000 square yards of tufted rugs and carpets — about one-fifth of total U. S. output. *Fortune* estimates his net profits at $1,500,000 before taxes.

Eugene T. Barwick

have been noted. But far from enough has been done and more improvement must take place immediately lest we forfeit the privilege entirely, or see it considerably mitigated.

What compels a group of workers to want to exercise their right to organize? What motivates the men and women who work for us to decide one day to band together and, if not to work against us, at least to seek representation through an outsider, a union, in dealing with us in matters of their employment?

We can say all we want about our employees being deluded, about their being deceived, about their being compelled to join a union, or that they are the ignorant victims of scheming organizers. But we all know that if there were not other reasons, real or imaginary, if our employees did not honestly believe they were being underpaid or maltreated, that they were not getting the opportunities for themselves and their families that their honest work entitled them to, no union organizer, however skillful, however well heeled, could ever organize them.

Why do these fellow workers of ours become interested in joining a union? The answer is no mystery It is simply because by one process of reasoning or another our people have come to the conclusion that we no longer have their best interests at heart, that the opportunities for them are too few—in words of one syllable, they are not being well paid.

Bad management, broken promises, failure to live up to our commitments, these make it possible for outside influences to rob us of our employees' loyalty. If we keep faith with them, if we look after their well being as we do our own, if we apply more of the Golden Rule, there is no power capable of organizing our plants against us. But if we do not, if we say we will adjust wages upward over a period of months and don't do it, there is no legal power that can prevent the unions' attempt to organize our plants. And, frankly, if we make agreements or promises and do not keep them, we don't deserve the undivided loyalty of our people.

Tufted textiles is perhaps the fastest growing industry in the United States. As long as we do a good management job it will grow even bigger. Mind you, I said a good management job, not just a good selling job. A good management job begins with efficient manufacturing as the first ingredient to creating a sales demand. The product must be right. But the product will be right only if those making it take pride in their work and the man they work for, and most important of all, make enough money to buy the product they manufacture. And only if they can maintain the dignity and sense of security to which they are entitled as Americans.

Quality Control—Bluepr int for Tufted Textiles

BY J. L. FESPERMAN
General Superintendent
Cabin Crafts, Inc.

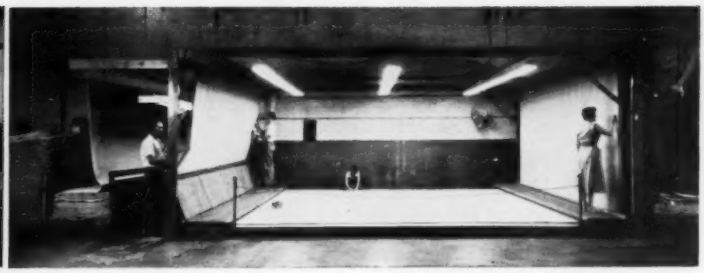
EXCLUSIVE

IN THE FORMATION of any new industry, particularly one which enjoys rapid acceptance of its products, the adoption of uniform quality control measures becomes quite a problem. The tufting industry began manufacturing tufted carpeting in the 1950-51 period, and after only five years is accounting for 42% of the total soft floor-coverings volume.

QUALITY CONTROL LAB at Cabin Crafts, Inc.

Such phenomenal growth produces headaches in the business of quality control, as well as in any other phase of manufacture, but the progress in establishing good control practices has been extremely rapid. The manufacturers of tufted textiles have found that the quality requirements in this field are extremely severe, but most of them have made great strides in surmounting the problems. Attempts are being made at the present to unify some of these efforts into a workable program under the auspices of organizations such as the Tufted Textile Manufacturers Association, the American Society for Testing Materials, and the American Association of Textile Chemists and Colorists.

This type of work, by necessity, is slow and ponderous. In the



CARPETS are inspected after backcoating . . . . . and after dyeing. *Photos courtesy Cabin Crafts, Inc.*

meantime, most carpet tufters have gone ahead in developing their own quality control programs. However, there are those who do not give enough real consideration to the seriousness of good quality control measures. This shortsighted approach, of course, can prove damaging to tufted floorcoverings in general, and could ultimately force these manufacturers out of the field entirely.

Cooperation With Suppliers. Any manufacturer must work closely with his raw materials suppliers in order to maintain quality in his products. Because his materials are frequently used in a great diversity of other products, the supplier can usually guide the manufacturer as to the proper selection of material. Usually, however, this can only serve as a guide, as for example, with the latex compounds used in backcoating tufted carpets.

The rubber latex industry is relatively young, and is well staffed with aggressive and intelligent rubber chemists and engineers. However, their background was principally in other fields, and this, combined with the manufacturers' lack of knowledge of the requirements they would need to place on the serviceability of the latex coatings, in the beginning were not likely to assure good quality. It was only the combination of a few bad experiences within the tufting plants and in the homes of a few of their customers, that brought about quite an extensive testing program in the laboratories of the latex suppliers, as well as in most of the tufting mills.

This same sense of cooperation between the tufters and other suppliers has established certain precedents and general rules of thumb that serve as guides to conditions that can be expected in the products. Without the guidance and patient cooperation of most of its suppliers, the tufting industry would likely be far behind on its quality control programs.

Much has been learned through the mutual approach by the tufters and their suppliers of raw material. A more thorough understanding of what the material will do in production and how it will perform in the product is being attained each day. In addition to this fact, the competitive situation on both levels is accelerating this understanding and speeding up the improvement of quality of the tufted articles. Certain standards of quality have been established by many of the tufters to guide them in the purchasing of yarns, fabrics, latex compounds, dyestuffs, chemicals, etc., and suppliers find themselves selling in a highly competitive market.

In addition to working closely on materials control, the tufter has seen a huge improvement in quality and workmanship from the machinery manufacturers. Demands for improvement in quality upon these machinery manufacturers have been reflected very graphically in improved tufted items.

A few years of experience in the production of carpet on tufting machines has given the manufacturer very definite ideas as to maintenance schedules which would permit the machinery to produce at maximum proficiency. Regularly scheduled maintenance has been proved to be a major

(*Continued on page 179*)

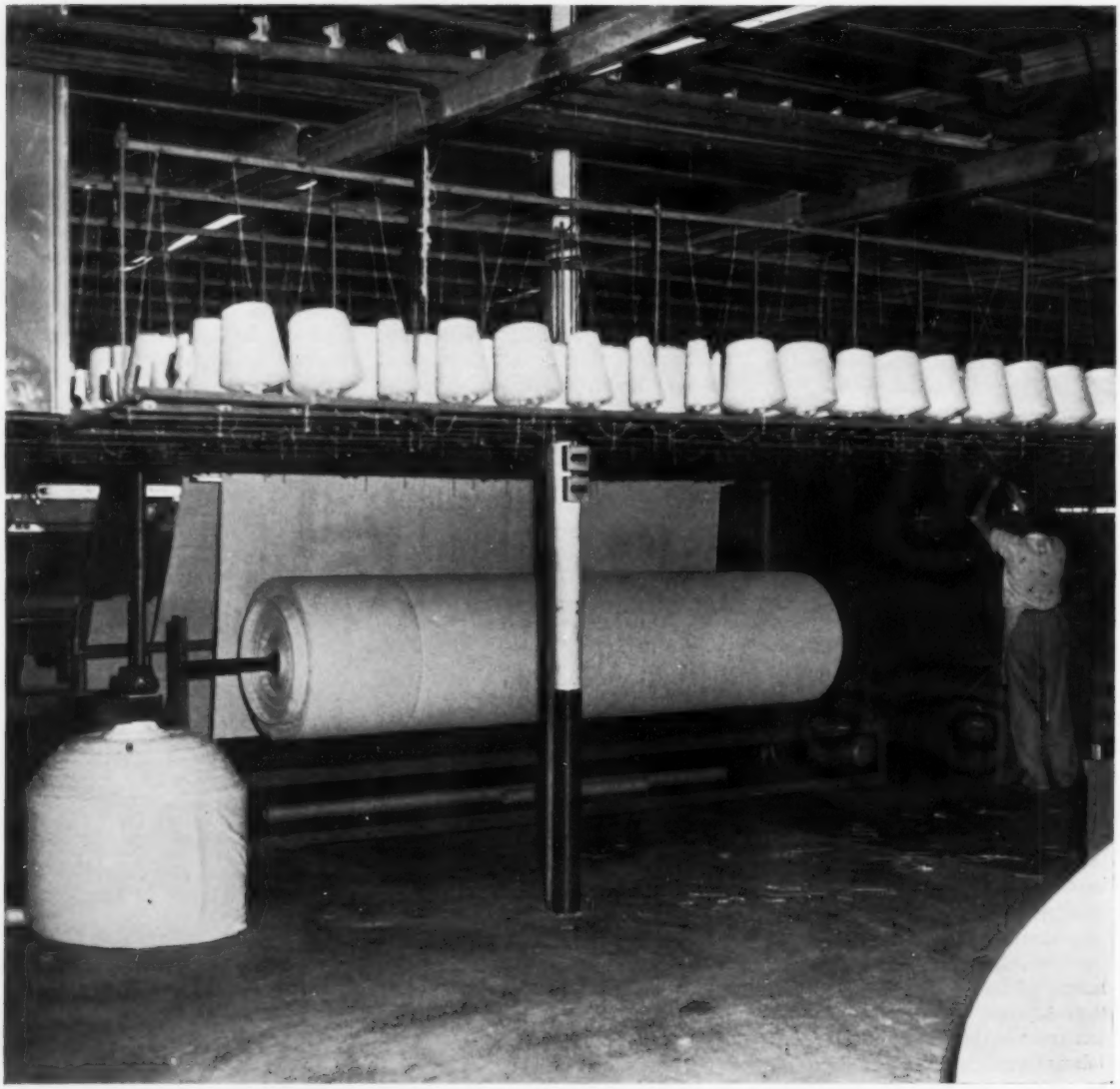
BEDSPREADS are being inspected here before dyeing.

Quality Brought Quantity to E. T. Barwick Mills

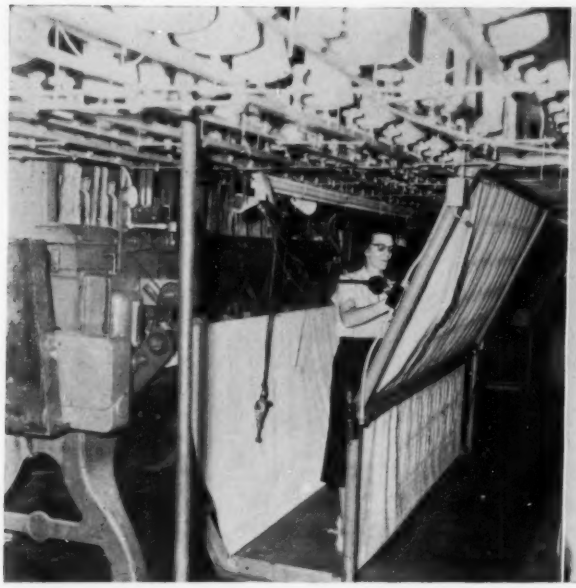
STAFF PREPARED
EXCLUSIVE

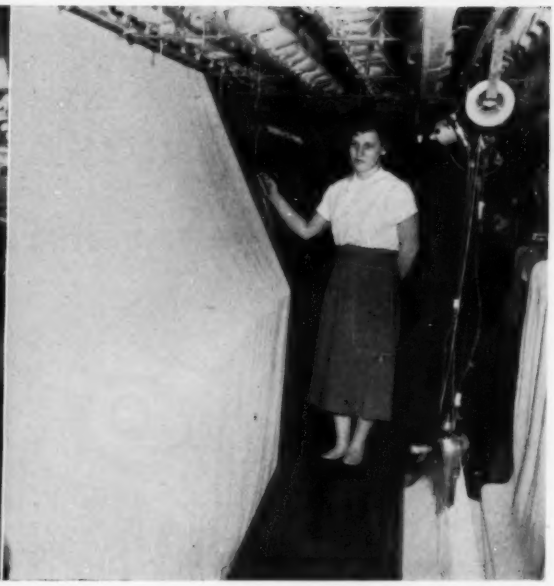
E. T. BARWICK Mills, with headquarters at Chamblee, Ga., and plants at Dalton and LaFayette, Ga., manufacture carpets from scatter rug to 15-ft-wide sizes. Barwick's growth from its very modest inception in 1949 to an organization with about a thousand employees and annual sales of over $30 million (more than all but three of the old-line woven carpet manufacturers) is exceptional, even in an industry where mushroom growth is routine.

Obviously, such a phenomenal growth must be attributed to a number of factors. That manufacturing know-how, readiness to try new ideas, and close attention to quality were not the least important of these factors is pointed up in this picture story of the Barwick operation.

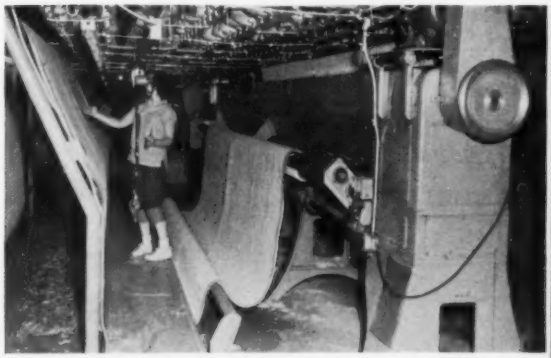


ALL CREELS at the Dalton plant, and most of those at the LaFayette plant, are the overhead type, instead of the usual two-deck type. Overhead creels save space and permit storage of yarn right under the creel, reducing handling.

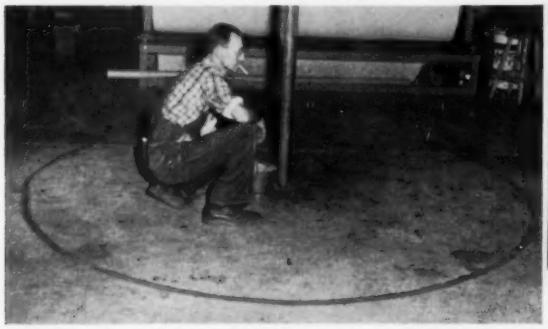




WIDE CARPETS are inspected as they are tufted. Inspector repairs ends out with a single-end tufting gun; on cut pile carpet she clips the tufts of the repaired end by hand.

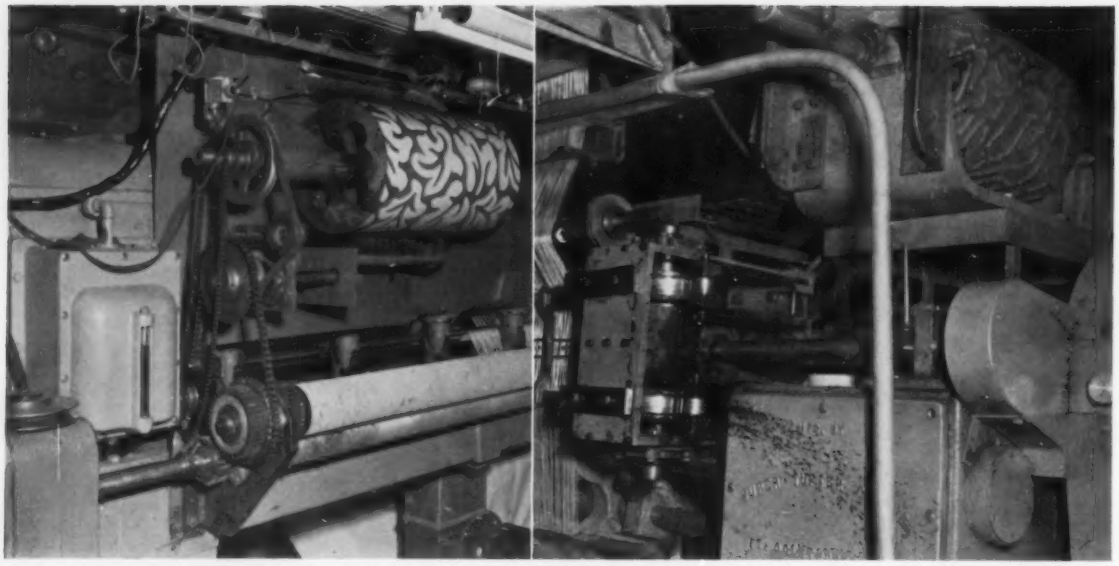


THIS 15-FT MACHINE at the LaFayette plant was tufting nylon-face 12-ft carpet when the photograph was taken. The machine is 5/32" gauge, and can tuft ½", ⅝", and 13/16" pile without changing cams, merely by putting shims under the throw plate. Face yarns run from 38 oz to 50 oz per sq yd. The backing fabric is made up of alternate ends of jute and kraftcord.

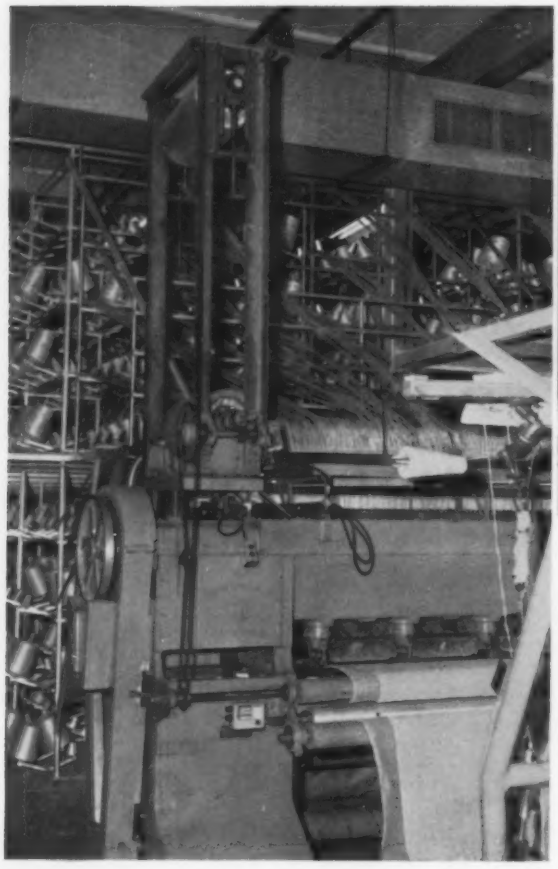


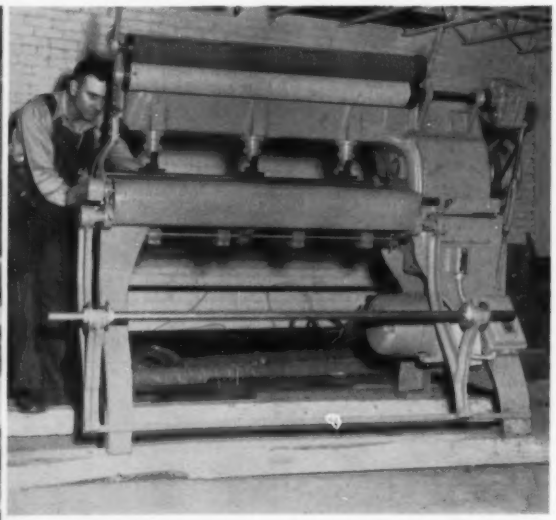
SMOKING is permitted within circled areas at several points in the plant. In addition, there are two seven-minute break periods daily, one in the morning and one in the afternoon, during which all machinery is stopped, where possible.

TUFTING MACHINE OPERATOR can patrol machine and still keep close control; on-off buttons are on the end of a long cord. Note gadget on operator's left wrist: Yarns are spliced, not tied, since knots won't go through the needles. Gadget holds a supply of latex solution for splicing; it is dispensed by a revolving steel ball. (The use of this device was described in detail in TEXTILE INDUSTRIES for June, 1955, p. 165.)



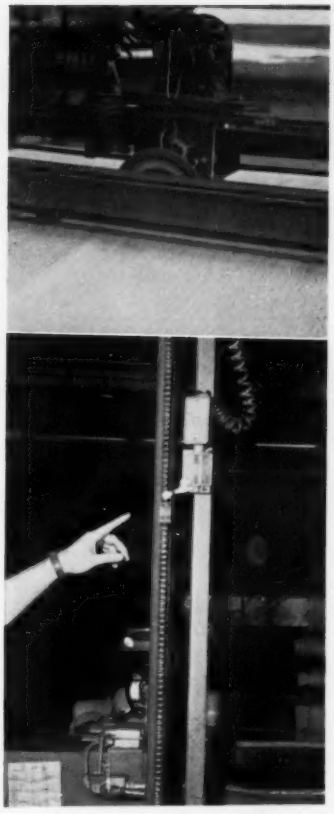
TUFTED RUGS could be made only in a limited range of patterns until recently. Patterning attachments now make it possible to reproduce patterns equal to those of woven rugs, except those requiring fine detail. The pattern drum in the left photo operates electrically; the surface of the drum is made up of electrically conductive and nonconductive sections, and these in turn control pile height. Drum at right controls pile height mechanically, by high and low areas around its circumference.



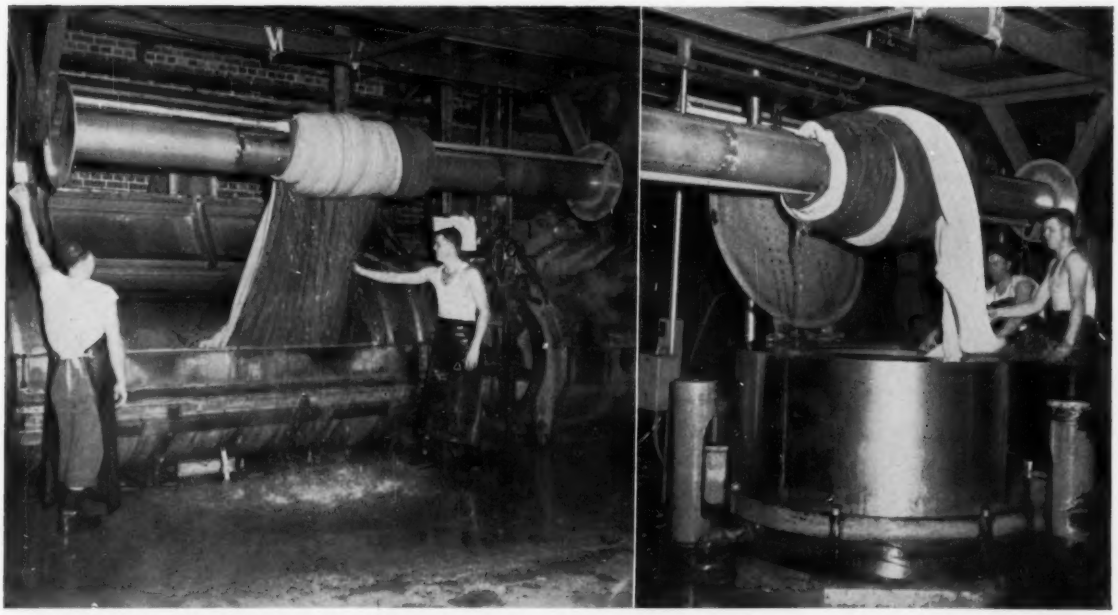


THE BARWICK PLANTS modify standard tufting machines or make parts to produce special effects. The gantry in the photo at left supports a pattern drum for producing borders on rugs (not in use when photo was taken); new machine in the photo above is being modified in the machine shop of the Dalton plant before being put into production. Note air conditioning ducts in the left photo; the tufting department of the Barwick plant at LaFayette is one of the few in the industry which is air conditioned. Winter temperature is held at 70 F, summer temperature at 75 F; relative humidity is 38% all year.

LATEX applied to back of carpets after tufting is cured by heat from infrared bulbs. Only white latex is used at the Barwick plants.



LENGTHS OF CARPETING less than a full roll are automatically cut to correct length after coming from latex curer by the knife shown in the top photo. Movable catch on chain in bottom photo is set for desired carpet length; it trips the Micro switch which sends knife across carpet.



CARPETS ARE DYED in rotary dyeing machines at the Dalton plant; they are shown (left) being removed from the machine by a mill-made unloading roll. Unloading roll and carpet are then moved on overhead tracks to centrifugal extractor, where the direction of the unloading roll is reversed and carpet is unwound into the extractor (right). The 12- and 15-ft carpets made at LaFayette are dyed in becks in open width.

Celanese

ACETATE STAPLE

Full range of deniers—from 2 denier to 50 denier.
Available in both bright luster and dull luster.
High crimp acetate staple designed for carpets.

ACETATE TOW (CELATOW)

Full range of deniers—from 2 denier to 50 denier.
Available in both bright luster and dull luster.

ACETATE FILAMENT

ACETATE SOLUTION DYED FILAMENT (CELAPERM)

RAYON FILAMENT

RAYON TOW

Celanese® Celatow® Celaperm®

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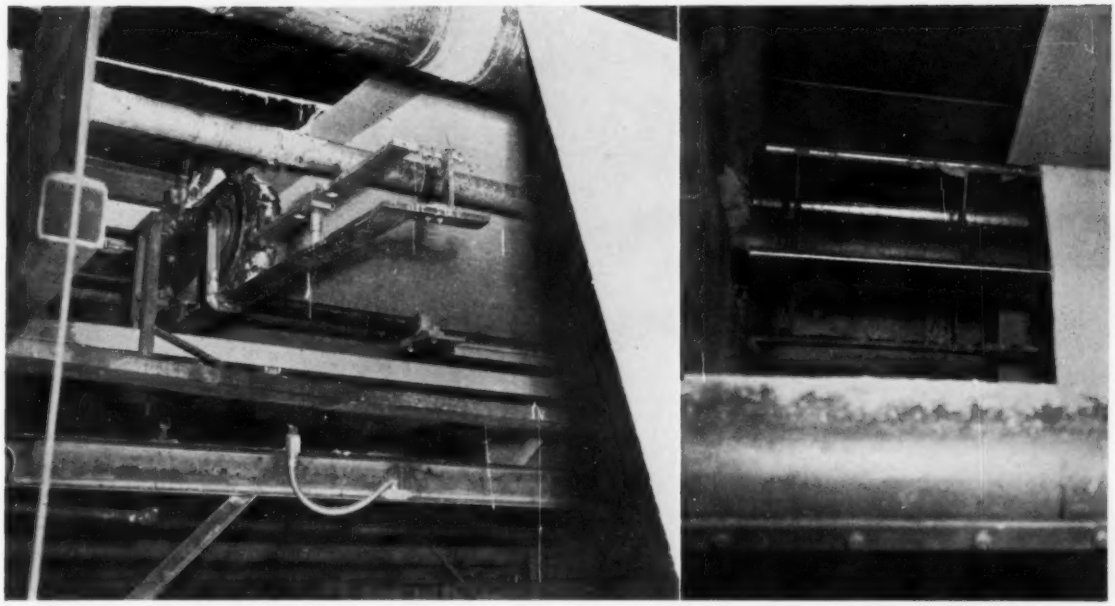
Box 1414, Charlotte, North Carolina
300 Broadway, Camden, New Jersey
140 Federal Street, Boston 10, Mass.

Quality Brought Quantity to E. T. Barwick Mills

(Continued from page 145)

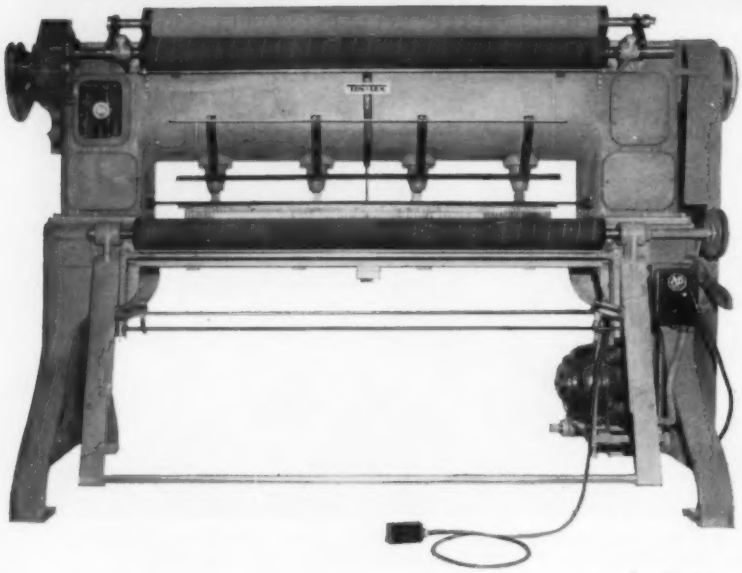


WIDE CARPETING, latexed after dyeing at the LaFayette plant, is held to width on a tenter (left) during drying; latex is cured by infrared heat. Right: Carpet is fluffed by revolving beater after drying and curing.

EACH ROLL OF CARPET is matched for color to a standard before shipping, in addition to match made in dyehouse.

TEN-TEX *presents . . .*

A COMPLETE LINE OF TUFTING EQUIPMENT



Ten-Tex has the latest and the finest

YARDAGE MACHINES

on the Market Today!

SIZES 30" TO 208"
ALL LOOP MACHINES AVAILABLE WITH PATTERN ATTACHMENTS

TEN-TEX ANNOUNCES THE NEW MODEL 100 LOW COST YARDAGE MACHINE!

TEN-TEX has developed and now offers for the first time an inexpensive, light-weight, yet rugged Yardage Machine in the Model 100. Ideal for producing small rugs, spreads, bath sets and garment material.

- DYNAMICALLY BALANCED FOR VIBRATIONLESS OPERATION.
- Low Cost.
- All gauges to 5/64", cut or loop pile.
- 30" and 40" widths.
- 800 to 1350 stitches per minute, depending upon gauge and materials used.
- Lightweight—suitable for wood floor installation.
- Anti-friction bearings throughout.
- Splash Oil system for efficiency—no lines or pumps to plug or fail.

TEN-TEX *Corporation*

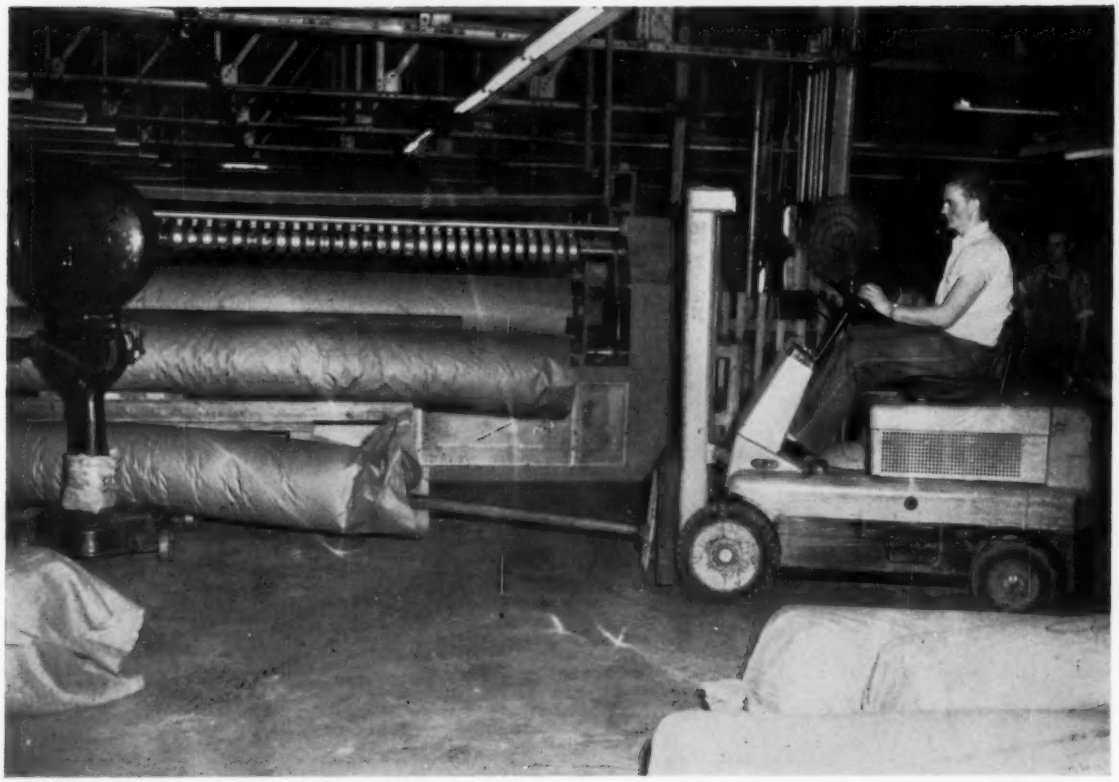
1207-09 EAST 23rd ST.

PHONE 7-4565

CHATTANOOGA, TENN.

Quality Brought Quantity to E. T. Barwick Mills

(Continued from page 147)



CARPETS ARE HANDLED in the shipping department by a lift truck with a special prong on the front which slips into the core of the carpet roll.

ALL PURCHASE ORDERS received by the Dalton plant from the main office at Chamblee are transferred to IBM cards. All data pertinent to the order are coded, including customer's name, style, yards, salesman, etc., and appropriate holes are cut in the cards to correspond. After a card is cut, it is rerun by another operator, working from the original order. If the keys she punches do not correspond with those punched by the first operator, a red light goes on; practically all errors due to operator mistakes are thereby eliminated. Billing is done directly from the punched cards by another IBM machine (right). The cards are later used for sales analyses; summaries of sales of each style, sales by each salesman, sales broken down geographically, or any permutation or combination of the data coded on the cards can be prepared automatically.

From wool to the new synthetics —

When you use soap

Colgate Formula 10 does the best job!

Gives a better final result. 92% Sodium Oleate . . . titer on the fatty acids 10° Centigrade . . . easily dissolved . . . excellent detergent effect . . . mild fulling action when you want it. Easily rinsed at low temperatures with no bad odor left in the fabric.

Yes, you can depend on COLGATE FORMULA 10* for dozens of textile processing and finishing jobs.

For low-temperature washing *ordinarily requiring olive oil soaps*, try COLGATE FORMULA 25*.

*Sold in eastern states only.

See your local C. P. representative for details, or write today to our Industrial Department.

FREE! New 1956 Handy Soap and Synthetic Detergent Buying Guide. Tells you the right product for every purpose. Get a copy from your C. P. representative, or write us at any one of the offices listed below.

Colgate-Palmolive Company

300 Park Ave., N. Y. 22, N. Y. • Atlanta 5, Ga. • Chicago 11, Ill.

Solve your "core" and "store" problems economically!

SONOCO CARPET CORES

DURO Super Carpet Cores have proven superior to any yet developed! Stronger and lighter, with exceptional breaking strength—made to take abuse. Immediate delivery on all standard 9, 12 and 15 foot lengths, in standard diameters. Also available in longer lengths and in any diameter and wall thickness.

Supplied in plain or solid colored stock with printed, decorative inside or outside wrap optional. Samples rushed to you upon request! Remember, there has never been a carpet core like Sonoco's DURO Super!

CARPET STORAGE TUBES

Now a simplified method for rug storage at a fraction of lumber or iron pipe rack cost! Economical SONOCO Carpet Storage Tubes are ideal for all standard width rolls and perfect for storing remnants or short rolls. Keeps merchandise in better condition and minimizes damage from crushing. Enables you to pull or replace any roll without disturbing entire stock. Can be worked with fork trucks, overhead trucks or manually. For temporary or semi-permanent rug and carpet storage in warehouses, cutting rooms, work rooms and display rooms. Many rug manufacturers have suggested this low cost storage method to their wholesalers. SONOCO will furnish literature.
Fast delivery on ALL DIAMETERS up to 36", and in any length up to 50 ft.

SONOCO sales-engineers will give you complete information, or write us direct—

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PAPER CARRIERS
REG. U.S. PAT. OFF.

SONOCO PRODUCTS COMPANY

MAIN OFFICE — HARTSVILLE, S. C.

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LONGVIEW, TEXAS • PHILADELPHIA, PA. • LOS ANGELES, CAL.
GRANBY, QUEBEC • BRANTFORD, ONT. • MEXICO, D. F.

DEPENDABLE SOURCE OF SUPPLY

Georgia Mill Weaves Jute Backings for Tufted Carpets

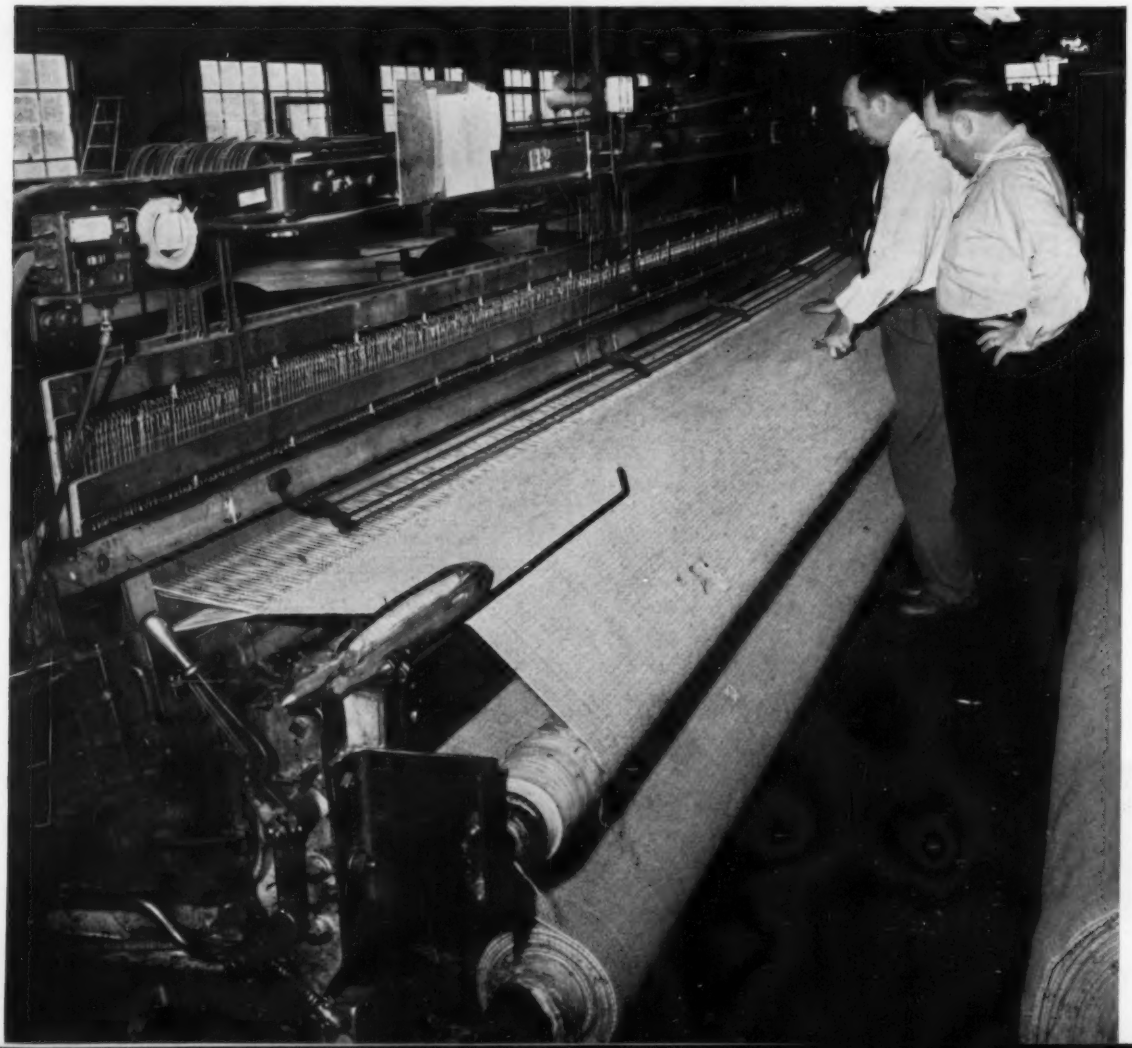
Capable of producing one-half of the industry's needs, Hazlehurst Mills makes on flat looms all-jute and combination-jute-and-kraftcord backing fabrics ranging in width from 100" to 204"

STAFF PREPARED
EXCLUSIVE

A UNIQUE domestic textile manufacturing operation, the weaving of all-jute and combination-jute-and-kraftcord backing fabrics for tufted carpets, is being performed at Hazlehurst Mills in Hazlehurst, Ga. According to Harry L. Sain, plant manager and vice-president of the parent organization, Patchogue-Plymouth Mills Corp., it is the only mill in the United States making cloth of this kind, since operations were discontinued recently at his company's plant in Lawrence, Mass.

When installation of new equipment has been completed, there will be 130 looms in place at Hazlehurst—not an imposing number to those accustomed to the several hundred looms operated by a large percentage of the weaving mills in this country. But, Mr. Sain said, these machines will be enough to weave one-half of the tufted carpet industry's needs for

WEAVING. Plant manager Harry Sain (right) and production superintendent Charles Ponder are examining a combination-jute-and-kraftcord fabric as it comes from one of the dobby type looms. This is a heavy woolen loom which personnel of the company's Lawrence, Mass., mill rebuilt for weaving the backing fabrics. The width was obtained by cutting the loom into two parts at a point mid-way between the swords and inserting suitable extensions for all components. There are 98 of these looms at Hazlehurst, and they do a good job; however, recently installed were 24 brand new looms built especially for this job. Turn the page for pictures and details of construction.



LUREX® MM

attracts new customers

for tufted fabrics

Lurex MM is making selling news—it is the "something new" that tufted fabrics have needed.

Lurex MM offers greater brilliance—its eye-catching beauty sells more rugs, carpets, towels, mats, robes and bedspreads.

Lurex MM provides smooth-running strength—From the beginning it has been engineered for efficient, economical production.

Lurex MM promises convincing durability. It is the quality metallic yarn backed by Dobeckmun experience.

Lurex MM is washable at high temperatures—and it successfully withstands the intense heat of dryers.

Lurex MM is the yarn your customers know. They know it is the metallic yarn *their* customers will recognize instantly because of outstanding national advertising campaigns and intensive and consistent promotion.

This tag tells you its Lurex, non-tarnishing metallic yarn made only by the Yarn Division of

The Dobeckmun Company, Cleveland 1, Ohio
New York: 350 Fifth Avenue • London • Amsterdam

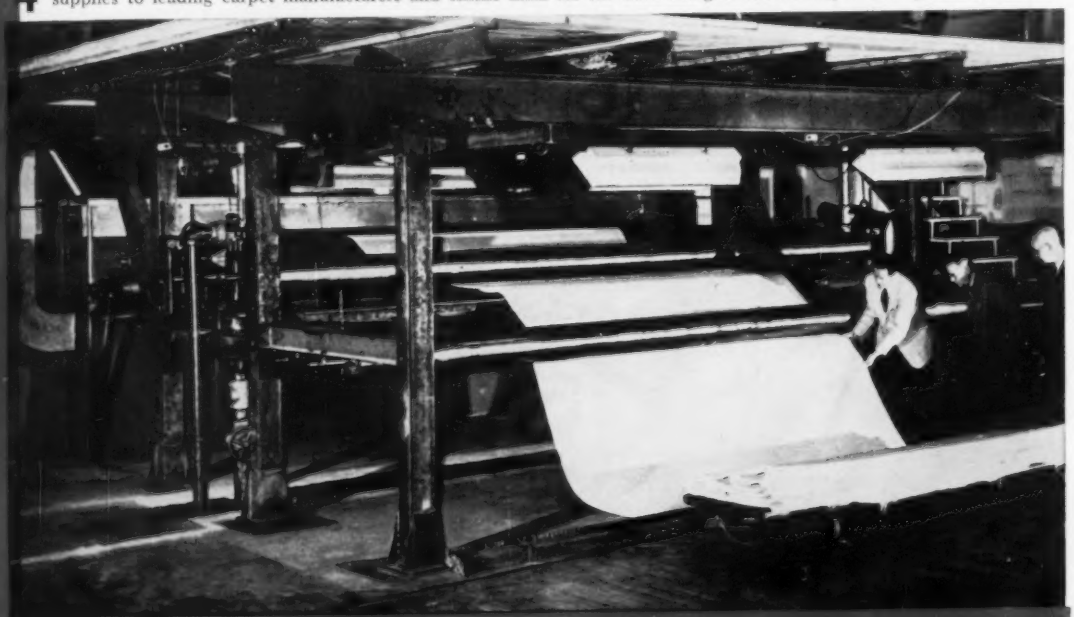
Boston • Philadelphia • Charlotte, N. C. • Chicago • Detroit
Manufacturing Affiliates in Canada:
William B. Stewart & Sons Ltd., Toronto and Montreal

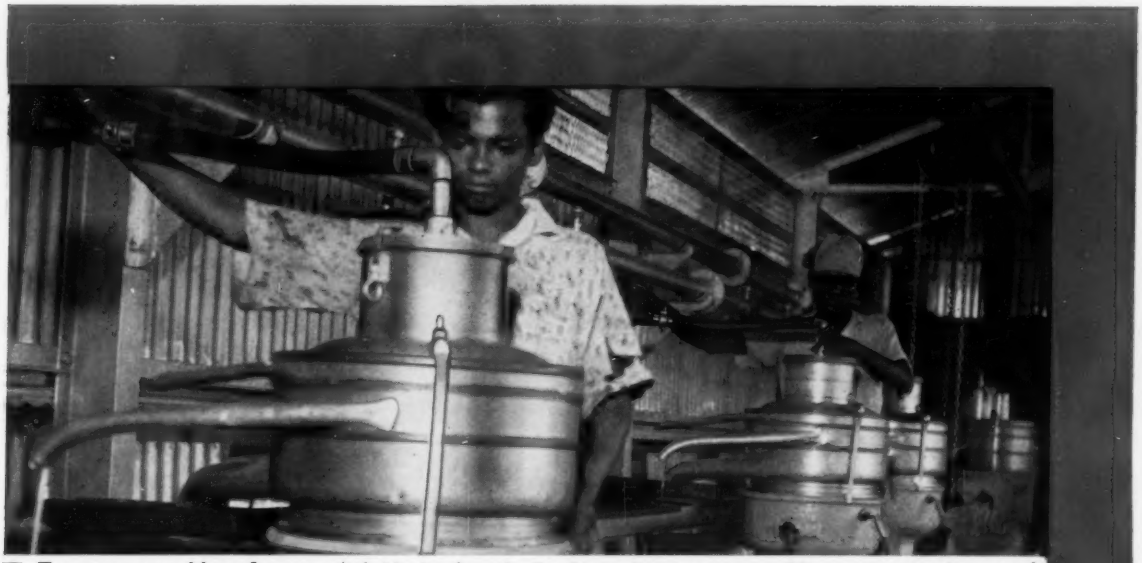
1 Flow of natural latex is started early in the morning by cutting away a one-fifteenth-inch strip of bark. To prevent spoilage, the latex is collected before noon of the same day.

2 Tank trucks speed latex from collection stations to the central processing plant, where laboratory tests are made and ammonia is added as a preservative during shipment.

It's Naugatuck for

4 Latex comprises an important part of the custom-compounded, ready-to-use LOTOLS® which Naugatuck Chemical supplies to leading carpet manufacturers and textile mills for the back-sizing of tufted carpet and upholstery fabrics.





3 To prepare natural latex for economical shipping from the Far East, a large percentage of its water content is removed by creaming (skimming) or centrifuging. The centrifuges used are similar to cream separators in appearance and operation.

Latex...Natural or Synthetic!

Despite the increasing emphasis on Naugatuck's chemically-made rubber latices, don't forget that Naugatuck maintains a steady flow of natural Hevea latex from the United States Rubber Company's extensive plantations in Sumatra and Malaya... delivered to East and West Coast in ample supply.

The method of obtaining this milky white substance from the Hevea Brasiliensis tree is still rather primitive. But, from this point on, the science of rubber chemistry has taken over to insure purer, stronger and more uniform grades of natural rubber latex for foam rubber cushioning and mattresses, elastic yarns, tire cord dipping solutions, adhesive tape, wire insulation, dip molding and many other purposes for which natural latex may be preferred.

Naugatuck offers Hevea latex of the finest quality in four basic types: creamed, low-ammonia cream, centrifuged and super centrifuged. It is shipped in 55-gallon drums or 10,000-gallon tank cars. For details, current prices and technical assistance, contact any of the plants or branches listed below.

United States Rubber

Naugatuck Chemical Division

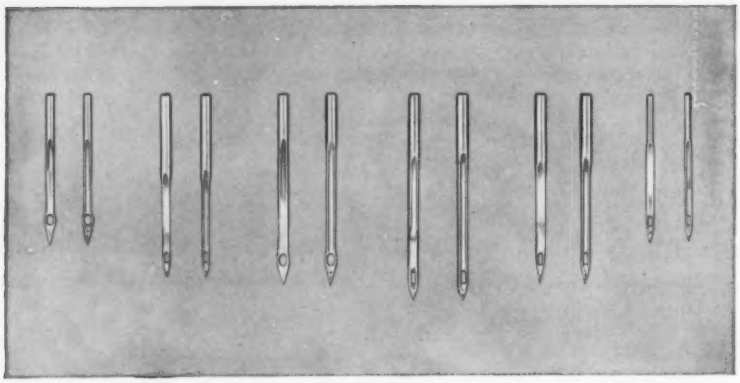
Naugatuck, Connecticut

BRANCHES: Akron • Boston • Chicago • Memphis • New York • Phila. • Mfg.: Los Angeles • Gastonia • Naugatuck • CANADA: Naugatuck Chemicals, Elmira, Ont.
Rubber Chemicals • Synthetic Rubber • Plastics • Agricultural Chemicals • Reclaimed Rubber • Latices • Cable Address: Rubexport, N. Y.

Order Your Tufting Needles From

TORRINGTON

Where All Needles are Precision-Made



Front and back view of six typical Tufting Needles.

Special design features, including swelled eye to allow for easier passage of yarn, and to reduce machine stoppage due to yarn breakage.

All blades are milled to close tolerances for maximum strength and proper clearance for the looper and cutter.

Order from your nearest Torrington office.

TRADE MARK ®

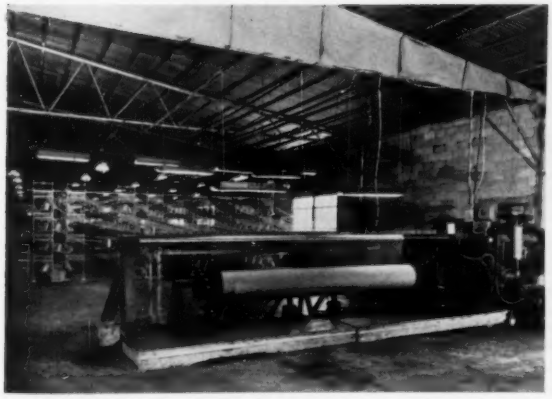
THE TORRINGTON COMPANY

Torrington, Conn., U.S.A. • Established 1866

Branches: New York • Philadelphia • Chicago • Boston • Greensboro, N. C. • St. Louis • Bedford, P.Q. • Toronto, Canada

Pacific Coast Representative: E. G. Paules,

1762 West Vernon Ave., Los Angeles 62, Calif.
Broadgate House, 7-10 Eldon St., London E. C. 2, England



WARPING. Jute yarns arrive at the mill packaged on tubes and cones ready for warping. Some of the warper creels accommodate cones, others tubes. To load the creel (in background), about 50,000 pounds of yarn are required. The heavy-duty warper in the foreground is comparatively new. Conversion of all beams to 36" heads is in process.

COP WINDING. The majority of jute yarn purchased for use as filling is delivered to the mill in cop form, ready for use at the loom. Some is wound on tubes and cones, however, and this must be rewound into cops. This operation is performed on cop winders like the one pictured above. Boxes full of cops at the extreme right are awaiting transfer to the looms.

these fabrics.

Tourists driving past the modest 120,000 sq ft building on their way to and from Florida would never guess that so much goes on inside. Yet, when the mill is operating at full capacity, 1.75 million pounds of raw material are required each month and a 3-million pound inventory of jute yarn is maintained. This will give some idea of the vastness of the operation.

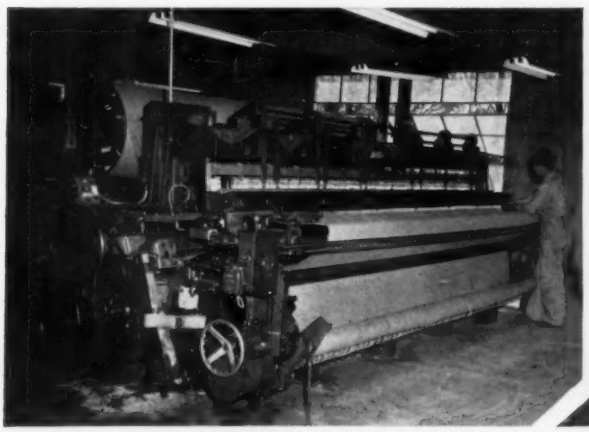
Requirements of a Backing Fabric. Much of the success of the tufting operation and serviceability of the finished carpet is dependent on the backing fabric, according to Mr. Sain. The fabric must be evenly woven under uniform tension across the entire width of the warp so that skewing in the finished carpet is prevented; there must be no thick and thin places; and the selvages must be straight to give a clean carpet edge.

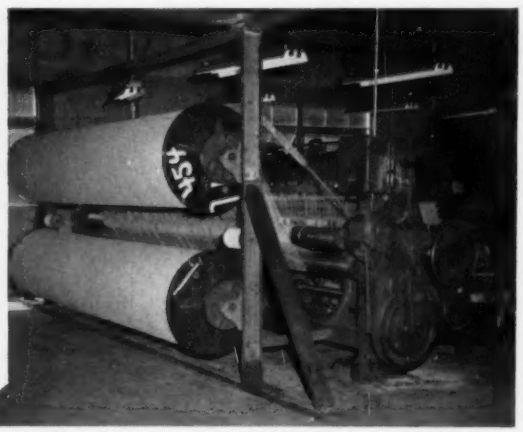
At Hazlehurst full-width loom beams are utilized exclusively to provide even tension all the way across the fabric; thus, carpets made from this backing lay flat.

Fabrics Woven at Hazlehurst. Both the all-jute and the combination - kraftcord - and - jute fabrics (kraftcord warp and jute filling) are made at Hazlehurst.

One advantage claimed for the combination type is that it produces a much more desirable "hand" on the finished carpet.

The mill is experimenting with





ONE OF 24 NEW AUTOMATIC LOOMS at Hazlehurst Mills designed specifically for weaving backing fabrics for tufted carpeting. The looms are 174" wide, and fabrics up to 168" wide can be produced on them. Speed at which these automatic, cop-changing machines are operating is 80 ppm. It is expected that 90 per cent weaving efficiency can be maintained, producing 225 lineal yards in 24 hours. There are fewer moving parts on these new looms; therefore, maintenance cost should be lower. Cloth passes around a spiked roller, rather than a filllet-covered roll, and is wound onto a wood roller which accommodates from 250 to 300 yards of fabric. An automatic cop loader transfers the cops into the front of the shuttle. To eliminate double picks which are ordinarily produced when a filling transfer is made, scavenging device was developed and patent applied for by the mill; installation of these was in process when this article was written. The looms are V-belt driven by two synchronized 1½ hp motors, one at each side. A 6" shed may be produced on these looms. Note in the right photo of the rear of the loom the rack provided for support of the two full-width beams.

Look to Proctor for

TUFTED CARPET EQUIPMENT designed to bring you profits

NEW **PROCTOR DOUBLE IMPINGE AIR CARPET DRYER**

This latest design dryer is equipped with a driven roll conveying system which conveys the carpet in a relatively relaxed condition thereby avoiding stretch or distortion. The dryer is versatile in that it is designed to dry with equal efficiency all types of tufted carpet—including extremely low pile, or extremely high pile. It will handle back coated carpet, wet carpet, face treated carpet; (whether steam or anti-soil treated) or a combination of back coated and face treated carpet without disturbing the pile.

•

NEW **PROCTOR LATEX APPLICATOR FOR BACK COATED CARPET**

Designed to provide adjustable tension on the carpet, adjustable roll speeds for uniform application and predetermined film thickness of the latex, plus a spreader roll with adjustable speeds to keep the carpet flat and at maximum width.

•

NEW DESIGN **PROCTOR FLOAT DRYER FOR BACK SIZED CARPET**

This machine is primarily designed for drying and curing of wet latex or resin back coating applied to carpet; may also be used for drying after piece dyeing. It is built for standard widths of carpet. Carpet delivers to the dryer directly from the pick-up roll of coating equipment; passes through the dryer supported by high velocity air. Wood lagged spike drum with variable speed pulls carpet through. Coated back touches nothing until it is dried and cured at delivery end of dryer.

NEW **PROCTOR LOOP DRYER AND CURER**

While designed primarily for the drying of carpets after dyeing, this dryer can be used as a final curing unit for latex back coating. Provides maximum holding capacity per foot of dryer length. Carpet is formed into loops over girts by a mechanical looping device. Girts of conveyor intermittently rotate to prevent marking. Heated air is uniformly circulated down into the loops by fans on both sides of the dryer.

•

NEW **PROCTOR SHORT YARN SYSTEM**

Finely spun yarn made from natural and/or synthetic fibers in only 4 operations using Proctor Blending Systems and Synthetic Card for use in the manufacture of high quality tufted carpets.

•

NEW DESIGN **PROCTOR STOCK DRYERS**

High production dryers for stock dyed synthetic fibers for the tufted carpet industry. Combine all the features of Proctor W/M construction with improved arrangement of fans and heating equipment for economical and dependable operation.

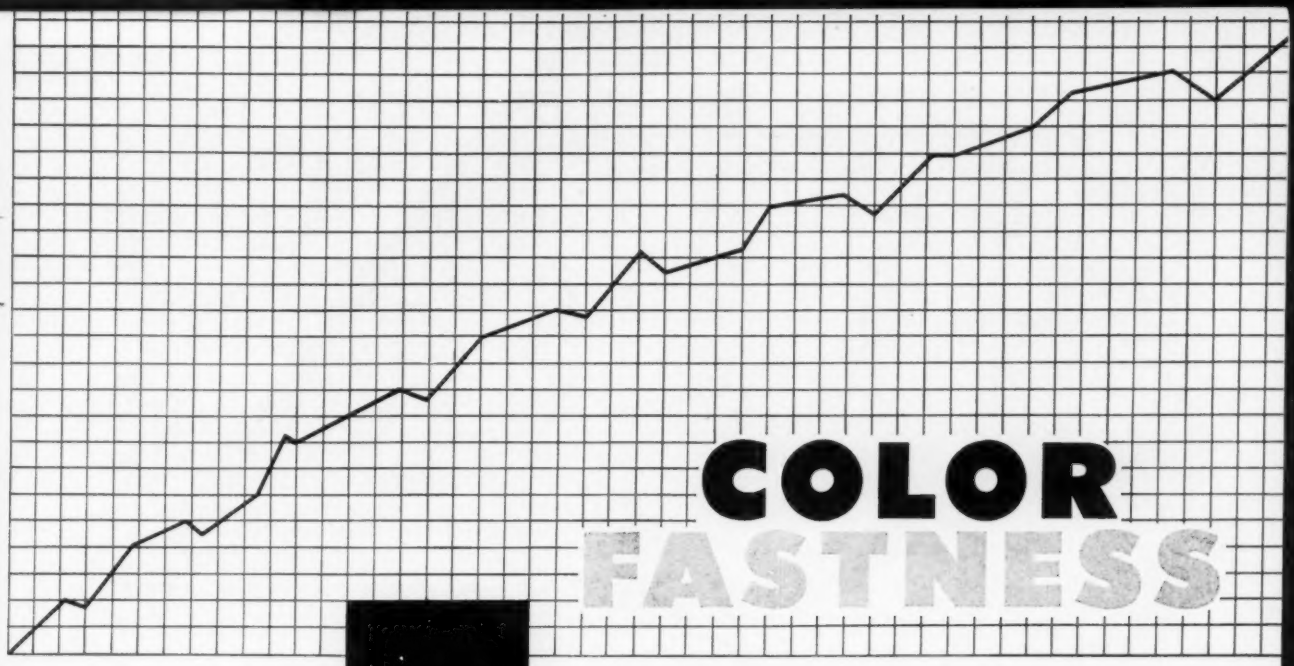
•

NEW DESIGN **PROCTOR W/M® CONSTRUCTION**

Faster installation and modern appearance with this field proven construction—featuring smooth exteriors and interiors free of projections, thus promoting greater cleanliness and less down time for cleaning.

Proctor **PROCTOR & SCHWARTZ, INC.**
Philadelphia 20, Pa.

Manufacturers of Textile Machinery and Industrial Drying Equipment



COLOR FASTNESS

to meet every requirement

Color-fastness is the focal point of hundreds of promotions to consumers and retailers. It can be a vital selling point to you.

You can be sure your tufted textile fabrics will meet the consumer's fastness requirements...whatever the end-use...if you consult your Geigy representative about your color problems. He will gladly assist you in choosing the correct dyestuffs...suited to your processing needs . . . to produce the desired fastness *most economically*.

These famous trade names identify Geigy products that are now being used by leading dyers in the tufted textile industry:

SOLOPHENYLS*	Direct dyestuffs that mean the tops in light fastness.
CUPROPHENYLS*	After treated direct dyestuffs to produce unusually high wash fastness economically.
TINON* and TINON CHLORINE VAT DYES	Fine quality vat colors for use where maximum wash fastness is desired.
GYCOFIX* 67	An outstanding fixing agent for improved fastness to light, washing, and perspiration, with direct dyestuffs.

Your Geigy representative will be happy to provide you with samples, informative literature, and technical assistance.

GEIGY DYESTUFFS

Division of Geigy Chemical Corporation

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BRANCH OFFICES: NEW ENGLAND: NEWTON UPPER FALLS, MASS. • CHARLOTTE, N. C. • CHICAGO • LOS ANGELES
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Geigy

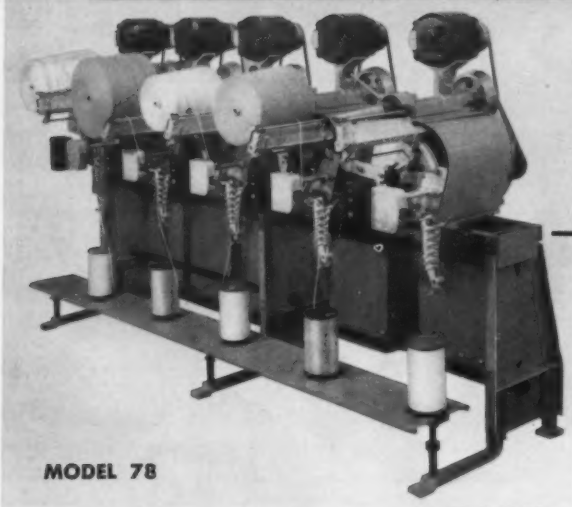
dyestuff makers since 1859

**Geigy Registered Trademark*

FOSTER MACHINES *for winding*

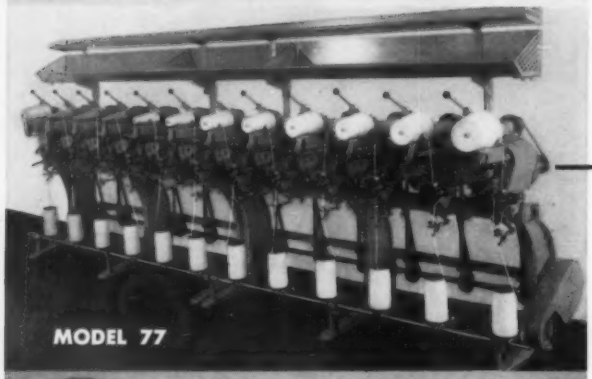
TUFTED TEXTILE YARNS

One is Best Suited For Your Requirements



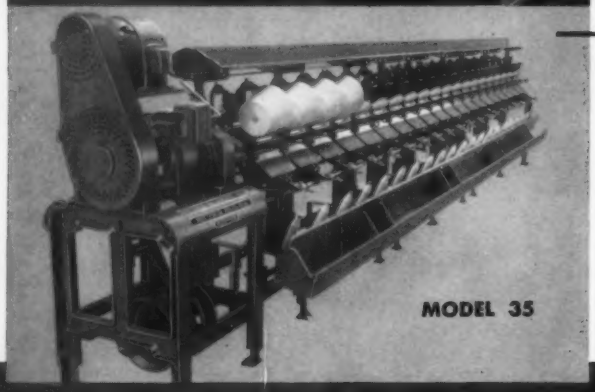
MODEL 78

MODEL 78 — This machine (built in 5 spindle units) produces 8" to 10" traverse, precise wind cones up to 16" in diameter and weighing up to 35 lbs. each. Ball bearing spindles are individually motor driven at speeds up to 800 R.P.M. It has controlled slow start and spindle brake, heavy duty belt gainer with hand wheel adjustment (or positive gear gainer, if desired), positive size stop, electric drop wire and expansion type cone holders, with handle control, for easy donning and doffing. Will wind overend from bobbins or from swifts, reels or unrolling devices.



MODEL 77

MODEL 77 — Built in 6 spindle sections, produces 4" to 8" traverse, precise wind cones up to 10" in diameter and weighing up to 14 lbs. each. Ball bearing spindles, individually belt driven by one motor, run at speeds up to 1100 R.P.M. It has a positive, long wearing package brake and positive solid tapered pulley belt gainer. It will wind overend from bobbins, or from swifts, reels or unrolling devices. 90° build-up from face of cone prevents broken back or under-wound packages.



MODEL 35

MODEL 35 — Built in units of 10 spindles to 80 spindles. Produces open wind 8" traverse cones up to 11" in diameter and weighing up to 9 lbs. each. Winding speed from bobbins is from 180 to 250 Y.P.M. and from skeins 100 to 150 Y.P.M. Standard taper cone holders are 7° 22½′ and 3° 51′. Package brakes and disc waxing attachments are extra. Can be equipped to wind from swifts, etc. as well as from bobbins. Write for Model 78 bulletin A-98A, Model 77 bulletin A-99, or Model 35 bulletin B-46A.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U.S.A.

Southern Office, Johnston Bldg., Charlotte, N. C.
Canadian Representative, Ross Whitehead & Company Limited, 1475 Mountain St., Montreal, Que. and 35-37 King St., Toronto, Ont.

European Representative, Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England

Showing Relative Size and Type of Wind

FINAL INSPECTION. Pictured in the left photo is the battery of mill-made tables for measuring, inspecting, mending and burling, and re-rolling the fabric. Visible behind tables in the left foreground are rolls awaiting inspection. With tufted carpet backing there is no such classification as "seconds"; the cloth is either first grade or waste—no in-between. Inspector (right photo) must see that cloth is tight and that there are no thick or thin places.

nylon and glass reinforced kraftcord and jute combination backings, Mr. Sain said.

Fabric Construction Details. Jute and kraftcord yarns in sizes No. 9, 12, and 14 (jute system— No. 1 yarn=14,400 yards per pound) are specified for most backing fabrics.

The weave utilized depends on the finished carpet requirements. Most popular are plain, twill, and herringbone weaves.

Number of ends per inch in the fabric ranges from 13 to 18; number of picks per inch, 11½ to 15.

To provide added strength during finishing, cotton yarns are utilized in the selvages of 100 per cent jute fabrics.

The backings produced at Hazlehurst weigh from 12 to 18 ounces per square yard, the most popular being a 16-ounce fabric.

Fabrics ranging in width from 100 inches to 204 inches can be made. As would be expected, backing for 12-foot-wide carpeting is most popular; most mills specify that the off-loom width of this fabric be 154 inches. Mr. Sain estimated that about 30 per cent of the fabric produced goes into 15-foot-wide carpeting. Off-loom width specified for this fabric is usually 196 inches.

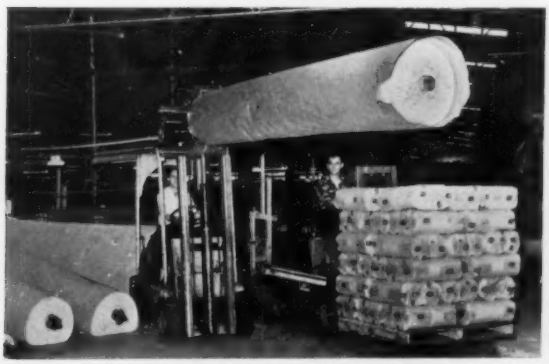
How Tufted Carpet Backing Is Made. The accompanying illustrations provide a picture tour of Hazlehurst Mills and show the steps in the process of manufacturing the fabric which is used as backing for tufted carpets.

Domestic and imported jute yarns, produced by both the gill spun and controlled draft systems, are utilized.

Kraftcord yarns, which are utilized exclusively in the warp, are manufactured at the mill from special, resin-treated, lightweight tissues purchased in rolls up to 40 inches wide (see photos on page 162). The resin makes the kraftcord yarns retain their strength during the wet finishing operation.

Warp yarns are wound onto full-width loom beams by heavy-duty, high-speed warpers. Stationary warp tying machines are utilized.

In the weaving department two and three full-width beams of



FORK LIFT TRUCKS SAVE MANHOURS galore in an operation like this. The truck at the left is equipped with a special skewer attachment for handling the wide rolls of cloth; it is used to transfer cloth from loom to inspection table to storage to truck for delivery to customers. A pallet full of yarn just received from an American mill is on the forks of the lift truck at right.

A FLEET OF TRUCKS to expedite delivery of goods to its customers is maintained by the mill. Six tractor-trailer units like the two pictured here are utilized, three for interstate service and three for intrastate. "Our customers do not have to carry large inventories of carpet backing," Mr. Sain pointed out. "We do it for them." Spot deliveries can be made on very short notice.

warp yarn are mounted on suitable stands behind the looms, the number of beams depending on the total number of ends required in the fabric to be woven.

When the diameter of a roll of cloth approaches the maximum which the loom will accommodate, it is doffed and taken to an inspection table where it is measured, inspected, mended and re-rolled preparatory to shipment to a customer.

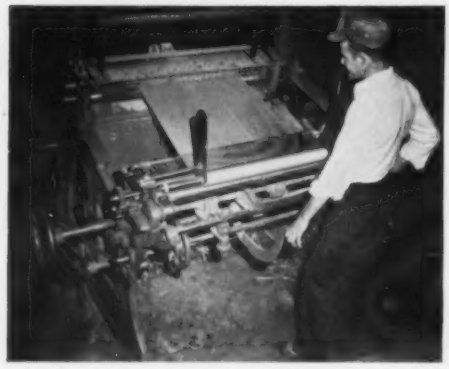
Quality Control. Recently completed at the mill was a new air-conditioned laboratory equipped with all of the instruments and other testing apparatus required to assure plant management and the company's customers that the fabrics conform to specifications; also, this facility will be most valuable in the development of other fabrics and processing methods.

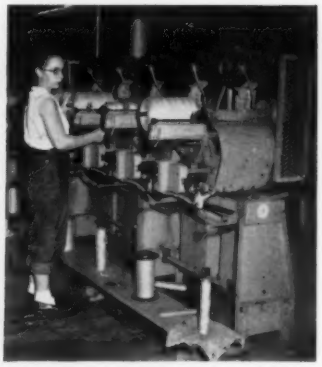
Other products under development are wide industrial fabrics for specialized applications where extra wide widths are advantageous. As an example, the mill is producing wide lightweight scrims made of synthetic yarns for reinforcing laminated paper items.

HOW KRAFTCORD IS MADE. A roll of tissue is placed on a slitter (**left photo**) and cut into a predetermined number of strips of equal width, their width being governed by the weight of the tissue and the size of the yarn to be produced with it. Cores for the individual pads or cheeses produced are formed at the start of the slitting operation by attaching a 4-foot long strip of gummed paper to the wind-up roll.

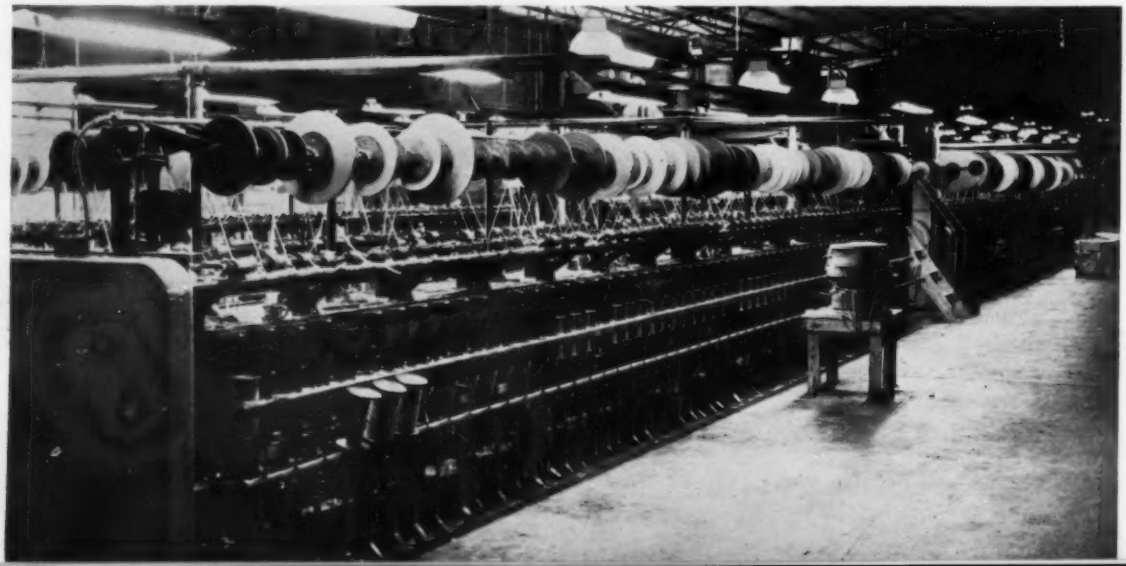
Center photo: after a roll of tissue has been slit, the individual cheeses are creeled in on standard wet twisters which were modified for processing the tissue—special creels, guides, and feed rolls were installed. Strips of tissue are pulled by the feed rolls from the cheeses in the creel, over porcelain guides, and under an immersion roll which is centered over a trough containing a special emulsion which (1) prevents mildew; (2) softens the tissue in preparation for twisting, and (3) serves as a lubricant for the yarn in weaving. From the emulsion trough the tissue passes through the feed rolls and onto the twister bobbin.

Right photo: Twister bobbins full of kraftcord are then taken to a heavy duty winder like the one pictured here for transfer of the yarn to tubes or cones as required.





FOUR TWISTERS provide the mill a production capacity up to 350,000 pounds per month of No. 14 (jute system) kraftcord. Containing 120 spindles each, they are equipped with 6½" rings and nylon travelers. Spindle speed is about 3800 rpm; twist, 4 tpi; traverse 8½". A bobbin full of kraftcord weighs about four pounds. Note the steps between the two frames pictured here. They lead to a mezzanine located above and in the center of the four twisters. On the mezzanine are tanks and other equipment for preparation and storage of the special emulsion which is applied to the tissue. The emulsion flows by gravity from the storage tank on the mezzanine to the troughs on the twisters. A float and solenoid valve arrangement on each twister keeps the troughs filled to the proper level. Thus, little attention is required for this phase of the operation.



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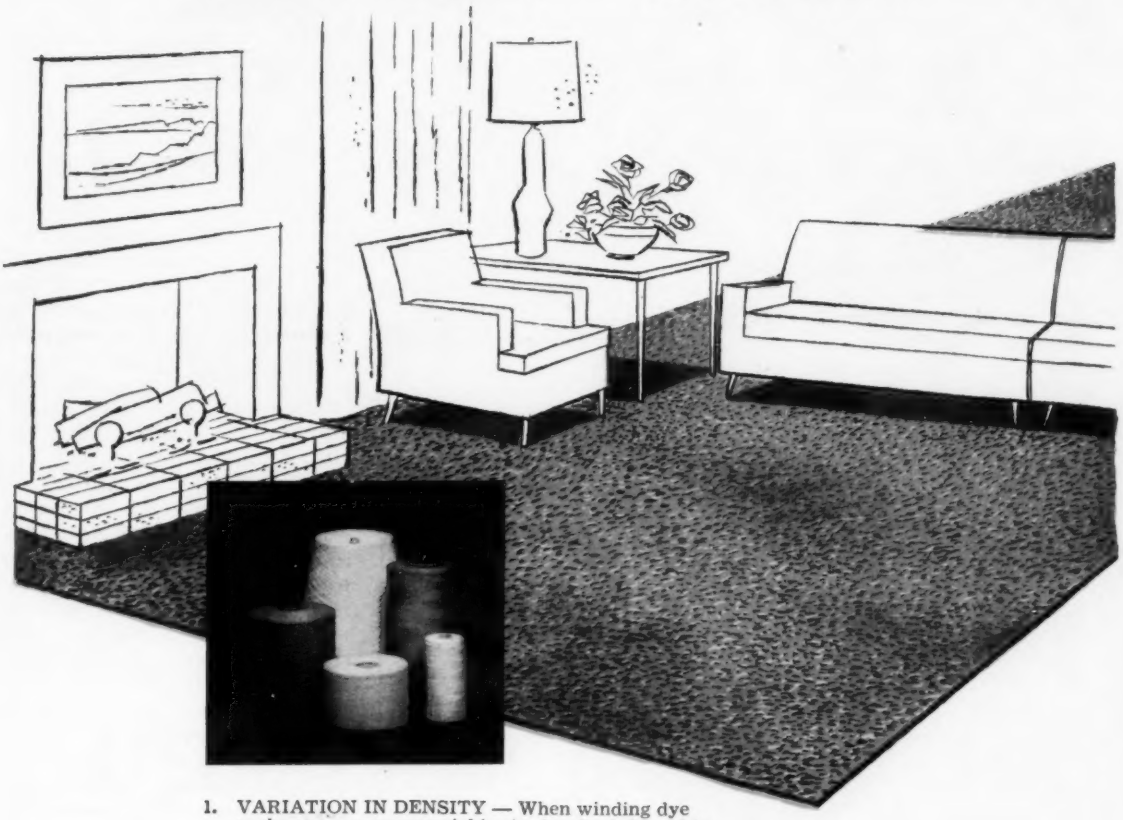
Compressible PACKAGE DYEING

the basis of quality in TUFTED TEXTILES



1. VARIATION IN DENSITY — When winding dye packages on a commercial basis, density is bound to vary from one package to another.
2. VARIATION IN SHADE — These variations in density will cause variations in shade.
3. EQUALIZED DENSITY — Franklin Process Compressible Packages Dyeing is the *only* package dyeing method whereby density of all packages in a machine can be equalized (see diagram).
4. UNIFORM SHADE — Exceptional uniformity of shade in Franklin Process dye batches is a logical result.
5. DYE BATCHES AS LARGE AS 2500 LBS. can be supplied if desired.
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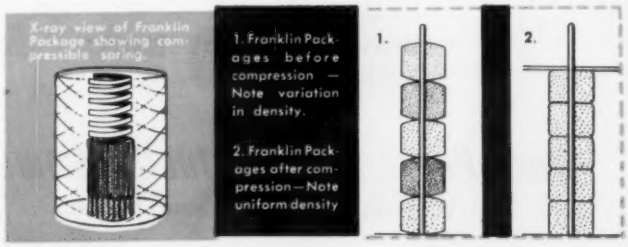
X-ray view of Franklin Package showing compressible spring.
1. Franklin Packages before compression — Note variation in density.
2. Franklin Packages after compression — Note uniform density
1.
2.

Tufted Textiles—News and Opinion

The following paragraphs are based on conversations between the editors of TEXTILE INDUSTRIES *and members of the tufted textile industry, suppliers to the industry, and others closely connected with the industry.*

The statements made come from within the tufted textile industry, but the responsibility for the relative emphasis given any statement is the editors'.

Carpet Tufting Machinery. Most of the effort devoted recently to improvement of machinery for making tufted carpets has been spent in refinements of construction details and in developing accessory equipment for producing more elaborate patterns. And a substantial improvement can be seen in the quality of the tufting machinery available, even compared with only a couple of years ago.

It used to be that a carpet manufacturer who bought a new tufting machine fully expected to have it in his plant for weeks, even for months, before his mechanics and the machinery manufacturer's erectors would succeed in getting it to run. Sometimes the machine never did run, and had to be sent back.

The same tufter now expects new machinery to be put into production as soon as it is erected, and it usually is. A good indicator of the improved quality: One of the largest tufters, which used to make all its own machinery, last year for the first time bought some from a machinery manufacturer.

Patterns for Tufted Rugs. Pattern mechanisms for tufting machinery are a comparatively recent development, but already they are standard equipment throughout the industry. There are two types available, mechanical and electrical, but both operate on the principle of controlling the amount of yarn fed to each needle. If the amount fed is not enough to make a loop of the length for which the machine is set, the needle "robs" the necessary amount from the previous loop, making it a short loop and producing a high and low pile effect.

Obviously, this method is not directly applicable for producing pattern effects with cut pile, because the loop can not be pulled back after it is cut. And as a matter of fact there are no tufted rugs available at present with a mechanically made pattern effect in high and low cut pile, or combinations of cut and loop pile. One mill produces a sculptured effect rug in which the low pile areas are cut out by hand with sheep shears-type clippers. One well informed member of the industry estimated that present research by tufting machinery manufacturers should result in commercially practical machines for producing cut pile patterns within the next three to five years.

Until very recently, no tufter was making a rug with a colored pattern, but one company now makes a loop pile rug in five colors (one background color and four accent colors). This rug is made on a tufted version of the Wilton weaving process—the accent yarns are buried until they appear on the surface to make the pattern.

There is no method yet beyond the experimental stage for making a multicolor cut pile pattern, ex-

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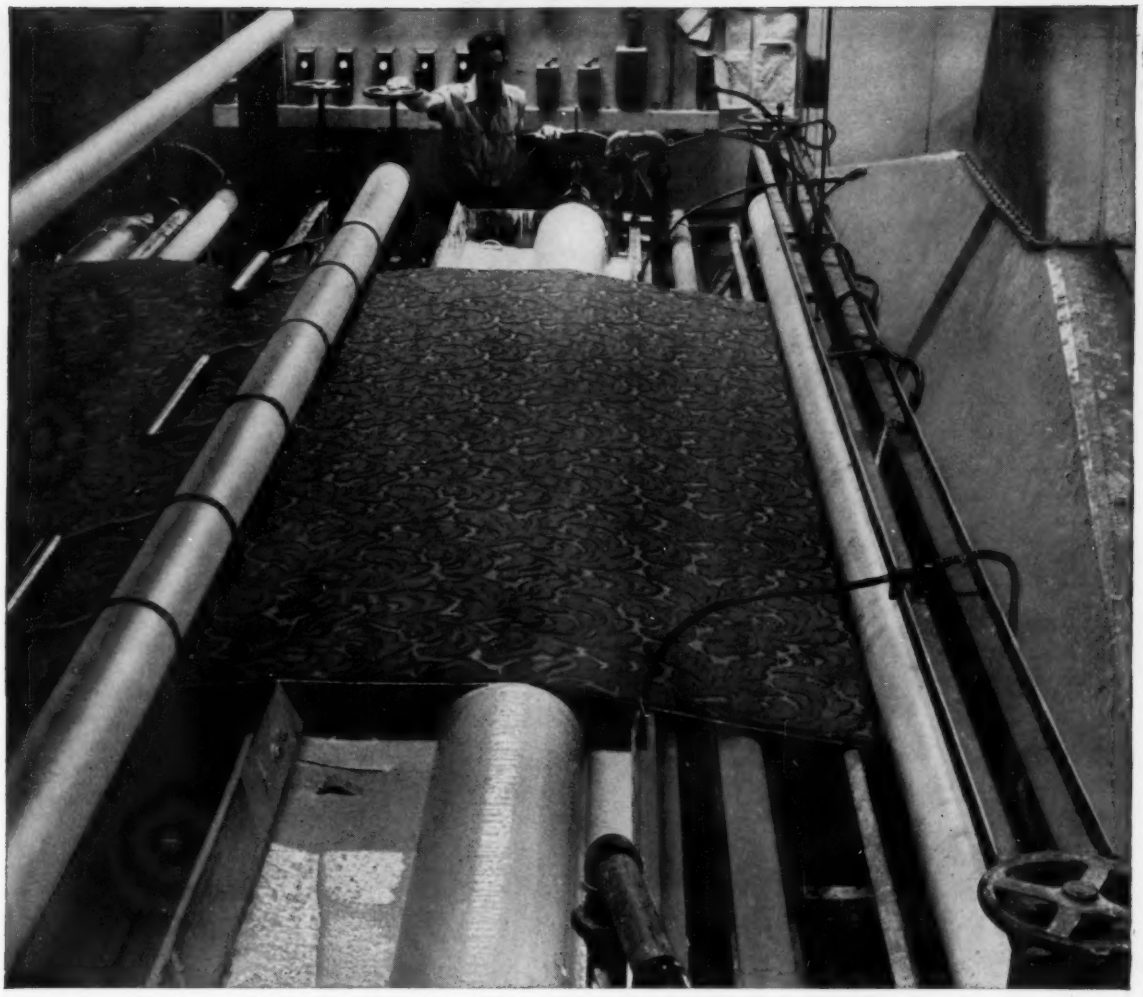

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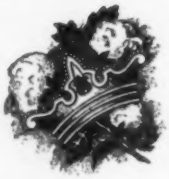

DALTON, GEORGIA

cept by hand overstitching.

Pattern work, incidentally, is a tufter's headache: The method of producing high and low pile puts more strain on the yarn than does straight tufting, so ends down are more frequent and efficiency drops. Tufters consider that the single-end tensile strength of a yarn for tufting patterns should be at least 15 pounds.

Backing for Carpets. For most of the brief history of the tufted industry, cotton fabrics—sheeting or duck—have formed the backing fabric onto which the tufting is done. This remains true for bedspreads, robes, and for rugs under 9 x 12 size. However, within the last few years jute and more recently jute-kraft combinations have edged into the picture, and now practically all wide rugs are made on a jute or part jute backing.

Tufted carpet manufacturers say that they prefer jute or jute-kraft combinations for carpet backing because they give more body and stiffness to the carpet than does cotton, and many consumers associate jute with the backing of a good carpet since it has always been used for woven carpets.

Combinations of jute with kraftcord (paper) are beginning to make an impact on the industry. This fabric is woven with a kraftcord warp and jute filling. Tufters say that it is desirable because of its stiffness, and of no small importance is that fact that it is woven domestically, which relieves the tufter of being in the embarrassing position of deploring the effect of foreign imports on one hand and buying imported fabrics on the other. Jute-kraftcord is much nearer in price to imported jute fabrics than are domestically produced all-jute fabrics.

A problem which early users of jute-kraftcord met was found to be due to the wax used in twisting the paper, which caused difficulty in making latex adhere to the backing. A different finish is now used, and adhesion of latex is no problem.

The first reaction of many tufters to kraftcord was that the backing of the carpet would fall apart in dyeing. Experience has proved

Exit end of Niptrol Mangle in use at C. H. Masland & Sons, Carlisle, Pa. Speed of operation is 20 yards per minute; extraction so efficient that remaining moisture is 20% to 30% less than by any previous process. Drying time and drying costs are correspondingly reduced.

Masland uses Niptrol Mangle for padding and extraction

A new two-stage operation by C. H. Masland & Sons uses the Niptrol® Mangle to pad carpeting with direct colors in preparation for development. Penetration is the highest ever observed by this manufacturer.

After development . . . back to the Niptrol Mangle for extraction, again at an exceptional level. Masland reports 20% to 30% less moisture to be removed in the drying operation.

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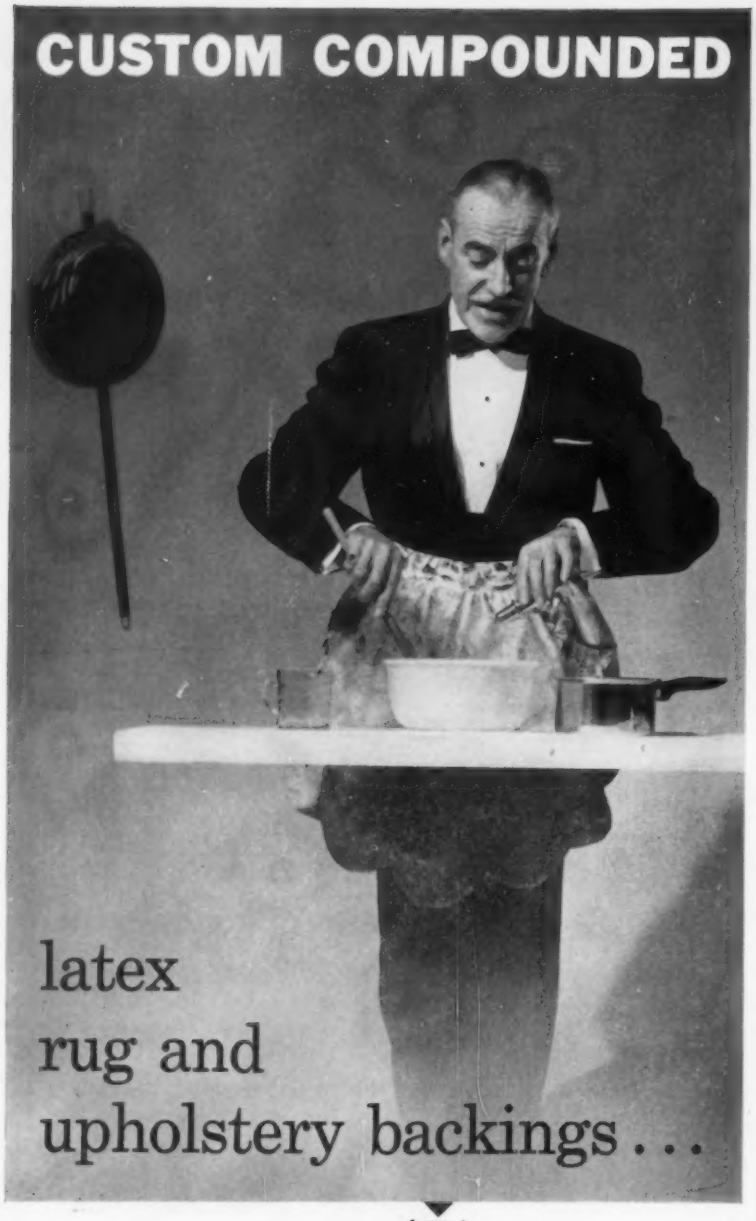

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that their fears were groundless. The kraft is a resin-impregnated paper, with high wet strength. At one tufting plant, a carpet with a jute-kraftcord back was in a dye beck for 10 hours—9 hours at the boil—for shade correction, and the kraftcord stood up without any trouble.

Tufters do find that tufting is more difficult on a jute-kraftcord backing. Needle deflection is sometimes a problem, i.e., the needle is deflected away from the cutter and the pile is therefore not cut uniformly.

One complaint heard about jute and jute-kraftcord backings appears to have no real basis in fact. One tufter claimed that these fabrics soak up more latex than do cotton, but other tufters retort that a simple control of latex viscosity is the obvious answer. Tufters do report that a rayon face-jute back carpet requires more latex (for tuft binding) than does a cotton face-jute back one. However, carpets are sold on total weight, not on the amount of latex visible on the back.

Yarns for Carpets. Big trend now obvious in yarns for tufted carpets is to solution dyed rayon. Only one domestic rayon producer is making solution dyed carpet staple at present, but competition from other domestic and foreign producers will probably soon be felt. Since there is only one producer, demand exceeds supply, so that the full potential use of solution dyed yarns in carpets is yet to be realized.

Tufters view with mixed feelings the popularity of solution dyed. It helps to bolster up a market which has shown some slight sagging, but brings problems of its own. Inventory is less flexible when solution dyed yarn is used. rather than piece dyeing. Big tufters make grey carpet for inventory, then piece dye as customer orders come in.

Building up an inventory of solution dyed carpet is risky, so these carpets are made on order, and deliveries are slowed down drastically. Plant efficiency drops, because of creel changing, and range of colors is limited. These

(Continued on page 171)

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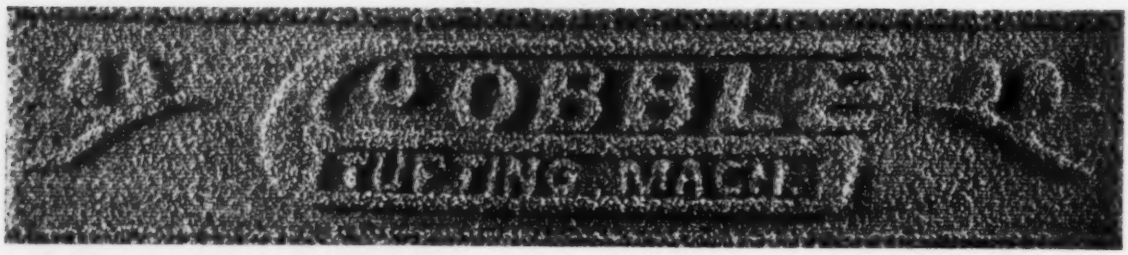

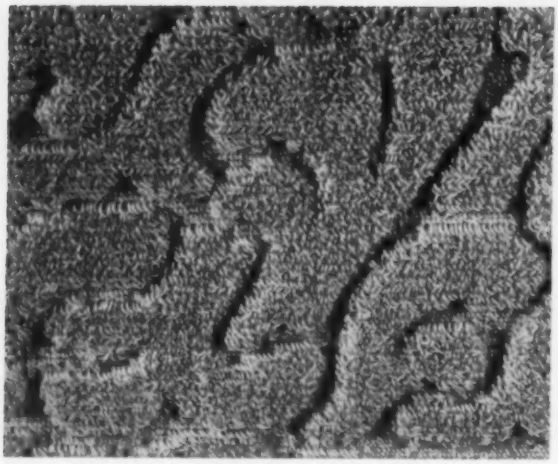

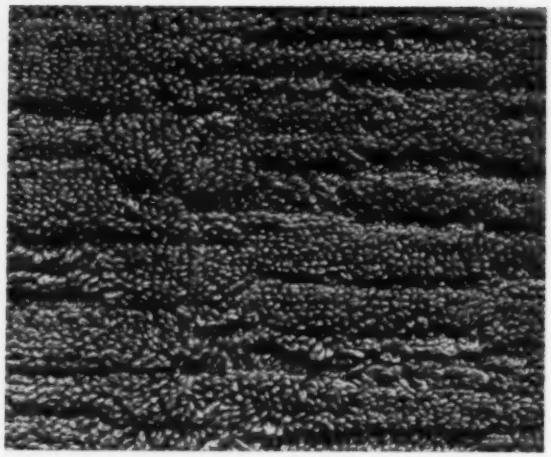

COBBLE TUFTING MACHINES ARE CREATING A REVOLUTION IN CARPETING!

The illustrations shown on this page are made from unretouched photographs and are samples of tufted carpet produced on Cobble Tufting Machines equipped with Automatic Pattern Attachments.* At top is shown an example of Special Design; upper right is Random Textured Pattern; upper left is Floral Pattern and at left is Geometric Pattern. The ultimate in yarn control, as evidenced by these various patterns, is obtainable with these Automatic Attachments.

The development and perfection of this idea by Cobble Brothers Machinery Company opens up new vistas to the rapidly expanding tufting industry.

*PATENT APPLIED FOR

Cobble Bros. Machinery Co.

INCORPORATED

RIVERSIDE DRIVE ★ ★ CHATTANOOGA, TENNESSEE

(Continued from page 168)
drawbacks, except for limited color range, of course, also hold true for stock dyeing and yarn dyeing.

One tufter expects that a result of the trend to solution dyed yarns will be a swing by tufters to the use of better dyes in their regular lines, to compete with the high fastness of the solution dyed.

Many tufters using cotton yarns continue to demand the cheapest they can get, with no thought to quality. They feel that they can adjust their machines to run these yarns with passable efficiency, and that the reduction in yarn breaks that they would get with a better yarn would not bridge the increased costs.

One spinner who sells to the tufting trade says that he will give the tufters all the strips and sweepings they want, but is sure that he could give them a better yarn at the same price if he used a little better cotton. However, tufters refuse to believe it. He also notes that most tufters seem to be unaware of the two per cent or more fly loss which they accept with low grade yarn.

One tufter deplores the price and quality cutting which gave cotton carpets a bad name with some consumers. The tufters who make these cheap carpets use too little yarn and yarn with a high short-fibered waste content, which causes excessive shedding when the carpet is in use. A housewife who buys one of these rugs tends to consider all cotton rugs as of the same poor quality.

Rayon continues to make steady gains in the tufted carpet field, as does nylon. One tufter says that if rayon were just a little bit better —had a little better soil resistance, a little better crush resistance, and a little better resistance to wear— it could sell for 20 cents a pound more than it does now and there would still be a big demand.

Pressure Dyeing. Carpets over nine feet wide have always been dyed in open width in becks, a method which has never been considered satisfactory. Beck dyeing limits dye lots to about 120 yards, side-to-center shading is difficult to prevent, and becks are not suited for application of vat dyes

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Ask for *details* of the benefits you get from Bemis covers.

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(because of high liquor ratio and continuous airing of the fabric).

Within the past year, pressure dyeing has been introduced to the tufting industry. The machines, similar to those in use for some time in dyeing tricot fabrics [see TEXTILE INDUSTRIES for October, 1954, pp. 112-116], overcome the problems of beck dyeing, but present new ones of their own.

Chief of the problems yet to be solved in pressure dyeing (incidentally, this term is a misnomer; the machines are built to operate at atmospheric pressure, or very little above, and temperatures are usually of the order of 180 to 200 F) is that of sufficient flow of the dye liquor, and therefore end-to-end shading of the carpet. In package dyeing of yarns, a flow of 4 gallons per pound per minute is considered the minimum for proper dyeing, with a 6-gallon flow still better; with the present set-up on carpet machines 2 gallons per pound per minute is the maximum obtainable. One dyehouse gets good results on the inside-out cycle, but not on the outside-in cycle.

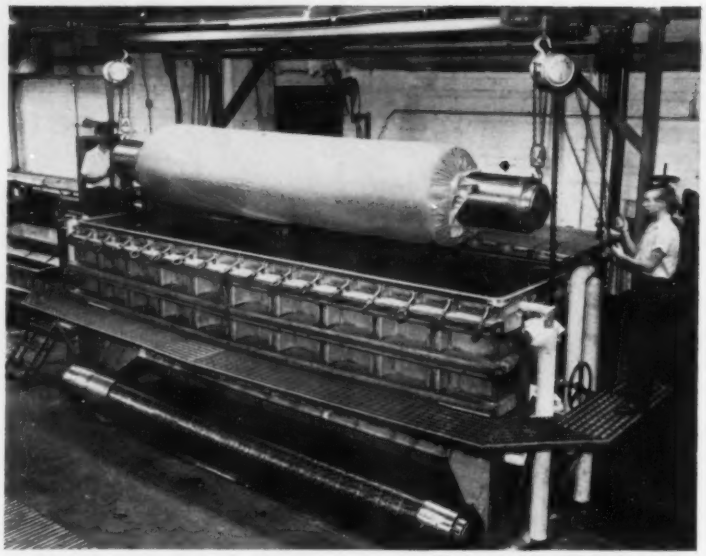

Photo courtesy Cabin Crafts, Inc.

PRESSURE DYEING MACHINE for carpet.

A larger pump would appear to be the obvious answer to the flow problem, but when this is tried the first few layers of carpet are spoiled. Buffer layers of fabric have been used, without too much success, and one dyer now plans to wrap the beams with a layer of insulation-type foam glass to break

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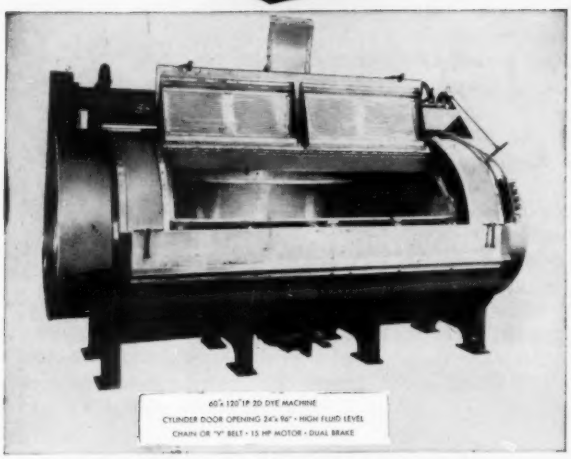

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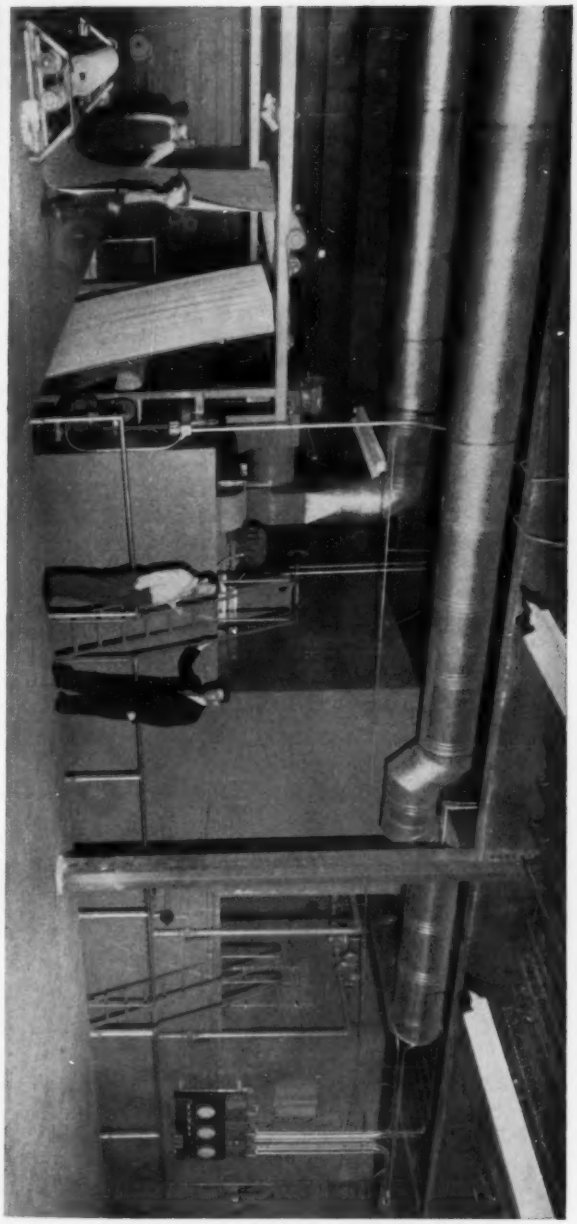

DALTON DRYING SYSTEM AT ROGERS DYE FINISHING

One of many recent installations specifically designed and built for the Tufted Textile Industry.

Manufacturers of Drying Ovens, Latex Automatic Spray, Folding Machines, Latex Dryers, Roll-up Machines, Rolla-Cota Equipment. All equipment engineered to fit your specific needs.

DALTON SHEET METAL CO., INC.

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up the flow.

Another problem with carpet pressure dyeing machines arises from the fact that the long axis of the machine is horizontal, rather than vertical as in yarn machines. Therefore, there is not an adequate head of water for return to the pump. It is impractical to design this machine for vertical use—it would require a 20-ft pit and about a 30-ft ceiling. In addition, the mandrel on which the carpet is wound does not have flanges like a beam. When wet it weighs in the neighborhood of 10,000 pounds; if lifted on end, all the carpet would slough off.

Another problem is that pressure dyeing develops a different surface on the carpet pile from the one produced by the constant rubbing in a beck. This different texture is considered all right for cotton and nylon, although not for rayon. Although different, this finish is not necessarily a bad thing, and also can be modified by suitable finishing procedures.

It is the consensus of tufted dyers that the problems which have arisen with these first pressure dyeing machines will be licked and that they will find a place in the industry. Their lower labor requirements, elimination of side-to-center shading, bigger dye lots, and suitability for vat dyes point to wide adoption.

Continuous Dyeing. The dyeing of wide carpets on a continuous basis is still in the embryo stage, but definite steps have been taken to make it a practical reality. One of the major manufacturers of dyeing machinery has contracted to build a 17-foot padder for one of the larger producers of tufted carpets, and delivery is scheduled for early this summer.

This wide padder is also said to be useful as a pressure extractor; it can bring the moisture content of a carpet down to about 60 per cent, versus about 90 per cent for vacuum extracting. Used as an extractor, it would therefore speed up and reduce the cost of the drying operation.

Large runs of a shade are necessary to make a continuous dyeing process economically practical, so continuous dyeing is not for the small tufter or commission dyer. Estimates of the size of the minimum economical lot range from 500 to 1000 yards, based on a speed of 5 to 10 yards per minute instead of the much higher speeds used in dyeing light weight goods.

A different approach to continuous dyeing, or at least to the elimination of the dye beck, has been made by one tufter. He plans to dye carpets not only in open *width* but also in open *length*. This is to be accomplished in a 100-foot long concrete trough, in which the carpet will be unrolled and laid out. Dyestuff will be poured in, and the carpet worked with squeegees. A 30-foot prototype of this "machine" is now in operation.

Bedspreads—Trend to Weaving. A thumbnail sketch of the tufted bedspread industry today would highlight these two points: depres-

(Continued on page 176)

Precision
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TUFTING MACHINE
Features 644 needles on 3/16 inch gauge sewing capacity with 114" wave line attachment and electromagnetic stop motion.
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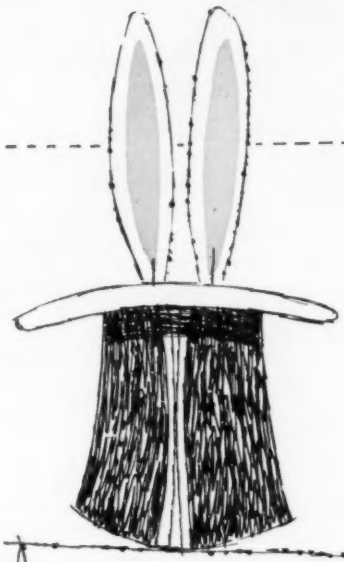

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Yarns and Cordages
Dalton, Georgia

Mills

Dalton Candlewick, Inc.
Dalton, Georgia

Dalton Candlewick, Inc.
(Royston Division)
Royston, Georgia

(Continued from page 174)

sion in tufteds, boom in woven spreads. This year's seasonal slump in the tufted bedspread industry started two months ahead of time, and is the worst since World War II. On the other hand, mills making woven "heirloom" spreads (competitive with the better-grade tufteds) are enjoying more business than they can handle.

Consumers who are in the market for a better spread seem to want the woven type, and as a result some tufters have put in looms and are now weaving them, and others plan to. Tufteds are not able to compete in the higher priced spreads ($6 and up at the mill); a tufted spread can be made to imitate the high-grade woven spreads, but it is more costly and the woven spread looks better. Woven spreads on the other hand can't compete in the price ranges below $6, but that part of the industry is the one which is now in a bad slump.

The depressed condition of the tufted bedspread industry has not yet caused many failures; the weak sisters were weeded out in previous recessions. But a continued depression is expected to thin the ranks a little if it goes on much longer.

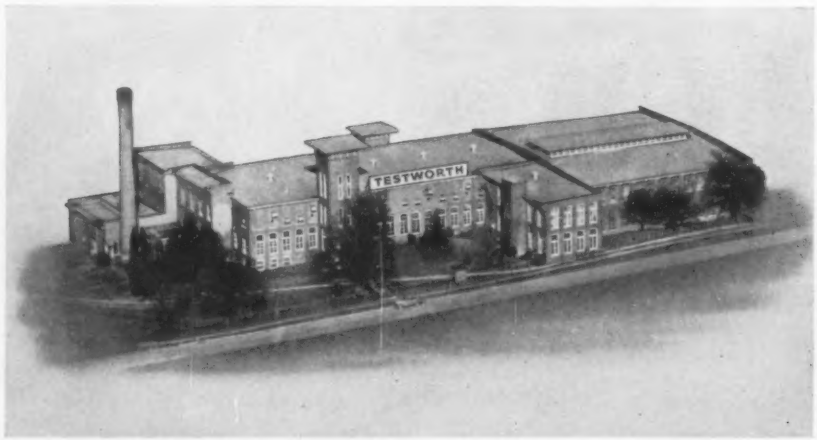
Dalton—Ex-Capital of Tufteds? Dalton, Georgia, bills itself as "The Chenille Capital of the World," but it is in danger of losing that title, many members of the tufted textile industry believe. These tufters cite a combination of bad labor relations, the activities of a group to which many Dalton citizens belong, and a generally "uncooperative" attitude of many townspeople as the roots of a situation which many of them view with alarm.

The Tufted Textile Manufacturers Association, the industry's trade group, ran head-on into the town's uncooperative attitude recently when it announced plans to erect a new headquarters building, for which land had been bought and plans drawn up. Residents in the area in which the TTMA intended to build blocked the organization's plans by invoking zoning laws.

TTMA members are thoroughly miffed at this rebuff; they plan to let their new building wait for a couple of years, and then try again. If the attitude in Dalton hasn't changed by then, the TTMA will move elsewhere, perhaps to Calhoun, Ga., where citizens have made it clear that TTMA would be received with open arms.

It is no secret that several towns in Georgia and nearby states have been wooing Dalton's tufting industry with promises of a better labor and civic climate; a few tufters, at least, have already dropped plans to expand in Dalton and have built or are building branch plants elsewhere.

In defense of Dalton's townsfolk, it must be said that many tufters are the first to admit that the industry itself is by no means without blame. Wages in the industry are well below those of other branches of textiles, and on the whole, the industry has never been noted for a sense of civic responsibility, to put it charitably.



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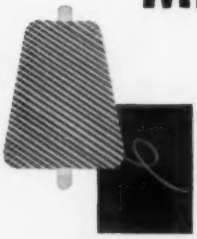

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Corporation

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This is the extractor at the wet end of a Ross dryer. The Louis Allis motors in sight are a D.C. Select-A-Speed driving the pull rolls, several textile beater motors, and two 50-hp textile motors driving vacuum pumps.

In this tufted-textile drying operation

Lint's No Problem

for Louis Allis Self-Cleaning Textile Motors and Adjustable Speed Drives

These Louis Allis motors and range drives are at work on the wet and discharge ends of a J. O. Ross continuous-loop, wet rug dryer installed at Dalton Carpet Finishing Company, Dalton, Georgia.

Louis Allis motors that clean themselves are used in all segments of the textile industry, on many kinds of equipment — tufting machines, cards, pickers, warpers, tenters, spoolers, slashers, batchers, padders, etc.

Whether you process tufted textiles or other types, let Louis Allis meet your power requirements, for greater production and more efficient operation.

See your Louis Allis Sales Engineer.

This is the Ross oven from the discharge end. Here, Louis Allis power includes a Gearmotor at each end of the oven, ten 15-hp inlet fan motors, and a 7.5-hp exhaust fan motor.

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TE-105

Quality Control— Blueprint for Tufted Textiles

(Continued from page 141)

factor in maintaining quality on tufted items.

Customer Complaints. Customer complaints can be a thorn in the side of any manufacturer, but if they are put to work, they can be the greatest asset available in determining the shortcomings in his products. Tufted textile manufacturers have found that their customer complaints can be cataloged into a group of vital statistics which tell a very graphic story.

It seems to be the natural inclination to bring to the fore all reasonable arguments as a defense against the harangue of a buying public, but a quick investigation and corrective measures taken after, say, four or five identical complaints, can save a manufacturer much worry, will keep his customers, and will greatly reduce his total adjustments and allowances. Another service which customer complaints can and do perform for the tufter, is to serve him as a guide in establishing standard methods of tests and minimum standards for his products.

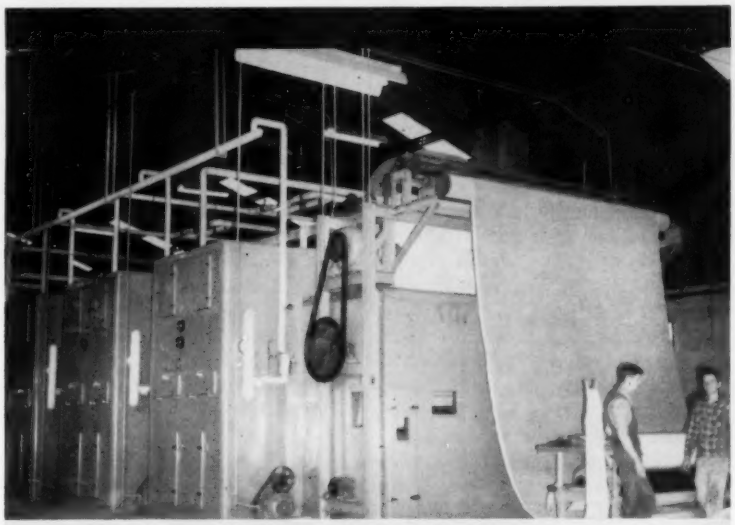
Many items manufactured by the tufting industry are used by a clientele which has established minimum standards that they use as a guide in their selection of suppliers. For example, the hotel associations, through many years of experience, *know* what a bedspread is exposed to: the number of launderings, damaging contact with suitcases, shoes, etc., the need for shrinkage control, and so on.

Factors in Maintaining Quality. All of the foregoing has served as a guide to the tufted textile manufacturers in establishing quality control programs. These several sources of information have indicated the needs of controlled testing of raw materials, constructions, processes, finishes, etc., as well as pointing up the need for testing the serviceability, cleaning, and maintenance on the part

(Continued on page 180)

ROSS Loop Dryer

For DALTON CARPET FINISHING CO.



Three of the Five Circulating Zones at leaving end of ROSS Dryer. Note the D. C. drive and Roll-Up machine at right.

Following the installation of their ROSS Latex Drying Oven, the Dalton Carpet Finishing Company, one of the largest serving the carpet industry, has now purchased their modern ROSS Loop Dryer.

This 60 ft. dryer handles 12 ft. Cotton, Rayon, Nylon and Wool Carpeting. Its widely spaced loops provide greater air circulation and, with its D.C. drive, maximum speed and tension control is maintained throughout the Range. Design features ROSS panel construction and provides access doors to interior mechanism. Full particulars on request.

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Detroit Los Angeles Seattle

(Continued from page 178)

of the consumer of his products. As a result, the manufacturer has set up certain inspection and sampling points in his plant, as well as having established laboratories for the purpose of making these control tests.

Let us follow an item from its raw material stage through to its final delivery to the customer, using carpeting as the example. During development, the carpet was exposed to traffic tests to determine resistance to crush, soilability, wearability, cleaning, etc. It is vacuumed, scrubbed, and abraded. Its exposure is severe.

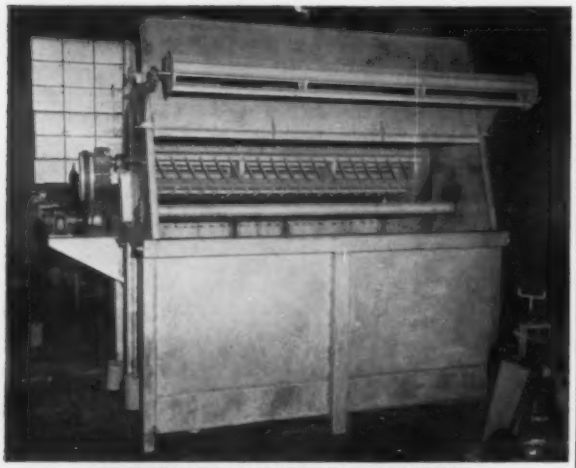
If it passes these tests, it then may become an item in the line. In this case, the foundation fabric is jute. Supposedly, it has been woven from jute yarns of a so-called stainless nature. The amount of oils and other discolorants in the jute can be a critical factor in the finished product. Minimum content has been established on the fabric, between the tufter and his supplier. Many of the tufters have set up extraction procedures for measuring the amount of oils and other discolorants in the fabric. Obviously, weight checks are made on a definite schedule of sampling to make certain that the fabric is up to minimum standards. Since this woven jute cloth is the foundation for the carpet, warp and filling breaking strengths have been established.

The most important component of carpet is the yarn which makes up the pile face. The life of a carpet, its ability to stand up under heavy traffic, its resistance to crushing, its soiling rate, its ease of maintenance, its texture and color are all determined primarily by the selection of fibers, yarn size and construction, pile height and density. Much thought, planning, and knowledge must go into the selection of yarn in every carpet construction if the manufacturer is to satisfy his customers.

After constructions have been adopted, very careful control measures must be assumed in order to maintain quality in this pile yarn fiber. Blends are constantly checked, quantitatively and qualitatively. Adherence to a standard yarn size is imperative for good quality; therefore, this must be carefully checked regularly. The degree of twist, both in the single and in plies, also plays an important part in the texture of the finished product, and any deviation from standard or great variance within a shipment can cause trouble, so qualitative tests must be run constantly here also. Uniformity of yarn used in the pile of tufted carpets is one of the most important factors in maintaining quality; therefore, much effort must be put forth in order to keep the products up to standard.

Tufted carpets, to a great extent, owe their very existence to the heavy backcoatings of latex compounds. Backcoating locks in the pile tufts, gives weight and body to the fabric, and affords a non-skid undercoating. Because of its chemical composition, the film applied to the back of carpets can be

(Continued on page 182)



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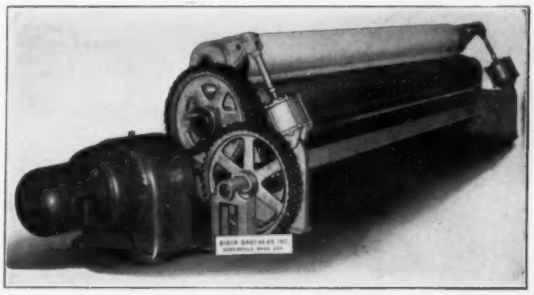

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(Continued from page 180)

a source of trouble, if it is not properly evaluated, tested, and controlled.

Before adopting a compound for his carpets, the tufting manufacturer must verify several salient facts. Will the latex be compatible with the dyestuffs used on the fabric? Will it mar fine floors on which it might be placed? Will unpleasant odors develop? Is it washable? Are the tufts locked in satisfactorily? Will it be attacked by ozone, oxygen or other damaging elements? Will it become "tacky" or embrittled? Is it chemically stable itself, so that, after months or years of service, it will not cause any fiber destruction?

These are questions that must be answered, but as mentioned before, when the questions first arose a few years ago with the inception of tufted carpets nobody knew the answers. Nowadays, a sensible carpet manufacturer has a comprehensive testing program which will show him the answers to these and other questions concerning the latex he is using. In applying the backcoating to the carpet, quantitative control is important. Careful control of penetration is a must. In this regard, careful control of viscosity plays an important part. This must be checked constantly. Batch sampling is important, because compounding errors could do a great deal of damage to thousands of dollars worth of carpet.

So, after checking the quality of all the material which will be used to construct the carpet, manufacturing begins and, with it, much inspection, examination, and checking. Inspectors at the tufting machine check stitching, uniformity, conformity to specifications, replace missing tufts, and correct machine faults. The batch then gets weighed and its weight is checked against a predetermined standard. At this point, a quality control person samples the batch and checks it quantitatively against specifications.

During dyeing, samples are taken from both selvages and the center of the piece, so that evenness of dyeing, as well as conformity to standard can be checked. As the goods are delivered from the dryers, another excellent opportunity to scan the goods is afforded. By this time, the final texture is beginning to make itself evident. At this point, very careful examination under the scrutiny of well trained inspectors is of extreme importance. Here, deviation from standard color or standard texture can most easily be corrected, and any missing tufts can be easily burled into the carpet. Since the next step is the application of the heavy latex backcoating, these corrections at a later stage are made more difficult.

Samples are taken before and after backcoating, in order to check the amount applied. Oven temperatures should be carefully controlled, and the speeds adjusted to insure proper dwell time in the oven for good tight cures of the rubber. After backcoating, carefully adjusted shearing operations may be used to get the ultimate finish and texture desired. And then the rolls of carpet are opened out, full length, on the floor and carefully examined for any flaws or deviations from the predetermined standards. Laboratory dissections are made as a final check to be sure that the goods delivered to the customer are up to standard in every way.

The foregoing is representative of what takes place in the production of tufted carpets in most of the larger mills in the industry. This, and more, must be done by all producers of tufted carpets if they hope to entrench themselves permanently and successfully in the soft floorcoverings industry. Goods produced and sold without employing proper quality control techniques can only bring discredit on the manufacturer and, eventually, the entire industry.

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VISCOSE, ACETATE, NYLON, WOOL, BLENDS TO YOUR REQUIREMENTS.
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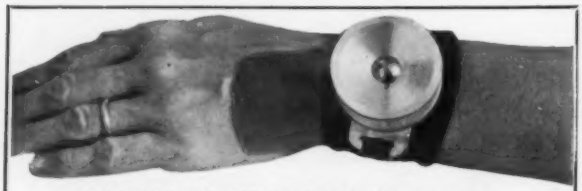

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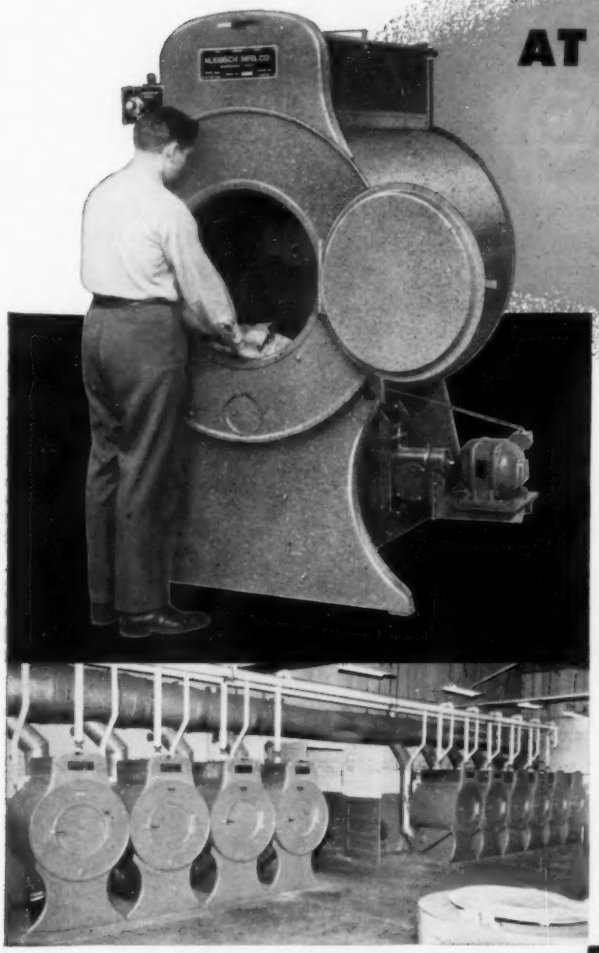

Above: *Installation of 10 Huebsch "42" Open-End Tumblers in the Katherine Rug Mills, Dalton, Ga.*

Right: *G. H. Rauschenberg Company, Dalton, Ga., has a line-up of 17 Huebsch "42" Open-End Tumblers.*

Find out how HUEBSCH TUMBLERS can help you in your plant

Huebsch Tumblers in the big 42″ size are serving tufted textile manufacturers everywhere. The Huebsch "42" provides double the capacity of an ordinary 36″ x 30″ 4-coil laundry tumbler . . . for faster, more efficient drying. Ask your Huebsch representative for complete information . . . or write to . . .

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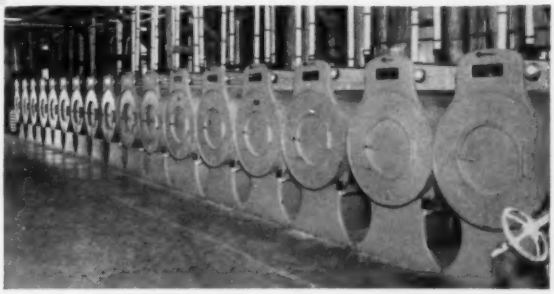

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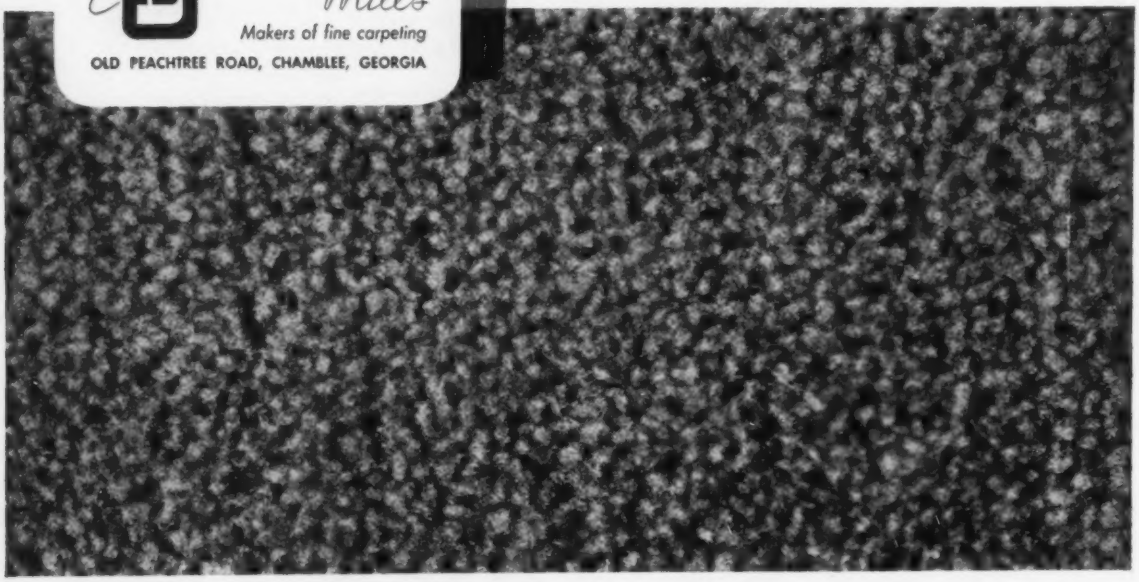

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Taxes and Tyranny

(Continued from page 134)

ing enough about the matter to understand what is happening to him, demands that his wages be increased to take care of what he terms the increased cost of living, when in effect he is actually demanding an increase in wages to pay taxes. This of course creates inflation, which hurts everybody.

Any reasonably sensible person should be able to understand that you cannot tax a corporation, because a corporation is merely an agency for carrying on business. You can only tax persons, and any monies which a corporation is required to pay to the government in the guise of a tax must, of necessity, be collected from the corporation's customers. Theoretically, of course, a corporation tax may be assumed to be levied against the stockholders, but this is seldom possible because competition regulates prices to such an extent that few corporations are making unreasonable profits over an average span of years.

Due to the accidents of business, some particular corporation may seem to make an exorbitant profit in one particular year, but a slight shift in consumer demand, or a disastrous strike, can cause a previously profitable concern to show a loss. It is only what a corporation earns over an average period of years that gives a fair picture of what it is actually doing.

We see almost every day the effect on an industry of increasing the cost of doing business. The electrical equipment manufacturers have just announced a general price increase following the general wage increases of last fall and this spring. If there had been a general tax increase, there would also have been an increase in the price of this equipment, because taxes are just as much a part of the cost of doing business as labor, fuel or office supplies.

Any corporation must include all taxes—whether local, state, or federal—in its expense budget which determines finally the cost of what it makes or dispenses.

This is nothing new and we have repeatedly commented on it, but it needs endless repetition until more people understand what is being done to them by these hidden taxes. The framers of our Constitution went to great pains to outlaw the income, and similar taxes, which had been agencies of government for 2000 years or more. Article One, Section Nine, of the Constitution stated,

> "No capitation, or other direct, tax shall be laid, unless in proportion to the census or enumeration hereinbefore directed to be taken."

The American people foolishly threw away this protection by adopting the Sixteenth Amendment to the Constitution without any limitation as to the rate of taxation, so that sales taxes can be levied in the guise of income taxes, and the man who actually pays the tax fatuously thinks that somebody else is doing it for him. When any suggestion is made that these hidden taxes be brought out in the open where people can see them and recognize them, the politician, of course, after weeping a few appropriate crocodile tears, claims that the poor man is not able to pay the taxes which he is already paying, and which he will continue to pay. The politician is seldom ignorant enough not to know what is happening, but he hopes the citizen is ignorant enough not to understand it.

The individual income tax can also become a hidden tax. When the Sixteenth Amendment was first adopted, many thoughtless persons hailed the income tax as being an eminently fair arrangement because "It is the only tax that cannot be passed on." At that time the highest tax rate was six per cent, and it applied only to incomes above $5000 a year, which would be about the same as starting the income tax at around $15,000 to $20,000 a year now.

The absurdity of believing that an income tax could not be passed on was clearly demonstrated when the First World War led to the imposition of tremendous surtaxes, which have been retained with varying degrees of intensity ever since. How easily billions of dollars in income tax paid by some persons can be passed on to someone else is easily seen.

If a large corporation wishes to raise the salary of its president $5000 a year, it may have to give him $50,000 for him to have $5000 left. The extra $45,000 at once becomes a cost of doing business for that corporation. A prominent moving picture actor or actress is in the same category, and the cost of paying such a person from $200,000 to $500,000 a year is passed right on to the folks who look at movies. The doctor, dentist, or lawyer who runs into these rapidly spiraling tax rates simply raises his fees to his customers.

Getting down to the lower brackets which affect everybody, the same thing happens. The payroll deduction scheme is a hidden tax plan. The operative never sees the money which goes to the government, and he and his union have regard only for the figures on the check indicating how much he can get when he cashes it. This is what he and his union call "take home pay," and that is the subject of argument when wage raises are under consideration. There is no way of calculating how many billions of dollars a year are passed on to somebody else and then back again on account of this concealment of taxes through the payroll deduction scheme.

The politician will of course argue that every wage earner gets a check with the total pay shown on it, but any employer can testify to the fact emphasized by many a labor union bargaining row that the workman is not interested in his total theoretical pay. He is only interested in what he has to spend.

If the federal government collected its taxes in a way so that the employer paid the employee every cent of his normal wages, and the employee had to cash his check and peel off a certain amount of his roll for the government, he would quite likely oppose much of the government extravagance which he now applauds.

The principal reason assigned at the time of its adoption for this payroll deduction scheme, which is probably unconstitutional, was that it was the only way the government could be sure to collect all of its taxes. The telephone company, the gas company, the electric light company, the department

(Continued on page 267)

How to Get the Most from Spinning Builder Motions

BY MALEY CHAGRO

EXCLUSIVE

Part I. Straight Warp Wind

THE SETUP of the spinning frame for straight warp wind, with the builder rack arm fully wound out, allows the first layer of yarn on the bobbin to traverse the full length. As the rack arm recedes, by picking action, toward the fulcrum of the builder, the traverse shortens and continues to do so until the frame is doffed.

Changing from Filling to Warp Wind. For the purpose of illustrating a complete setup and changeover, we assume that we are taking off filling wind and changing to warp wind. The first step necessary is to bring the ring rail down and lock it. Take off the filling cam and replace with the heart-shaped warp cam (Whitin setup), with the hollowed surface facing the builder. This goes on the stud arm of the cam gear in the head end of the frame.

Raise the panel at the head end of the frame and release rail, or lay gear, from mesh so that the cam gear can be freely moved by hand when positioning the traverse on the bobbin.

There are three holes in the rack arm, and it is now necessary to put the chain hook in one of them. As the rack winds in, the chain hook travels with it toward the fulcrum, thus shortening the traverse.

Fig. 2 will show why it is absolutely imperative that the chain hook always be in the same hole in the builder rack when a new doff interval is started. If, for example, the traverse has been set up with the chain hook in the second hole, and during the doff the chain becomes slack and the hook accidentally slips out of the second hole and is replaced in the first hole, the first layer in the ensuing starting traverse will go too high and too low on the bobbin, causing a bad set. Conversely, if the chain hook is placed in the third hole the traverse will start too short.

Setting the Traverse. Actually, the trial-and-error method has to be used in gauging the starting traverse. Once this is determined, adjustments are then made until the correct traverse is positioned on the bobbin.

Two factors governing the set of a traverse in relation to the quadrant are well worth mentioning and memorizing, especially when training new section men: "The higher the quadrant the shorter the traverse; the lower the quadrant the longer the traverse." This is in direct relation to the bobbin when setting the desired traverse.

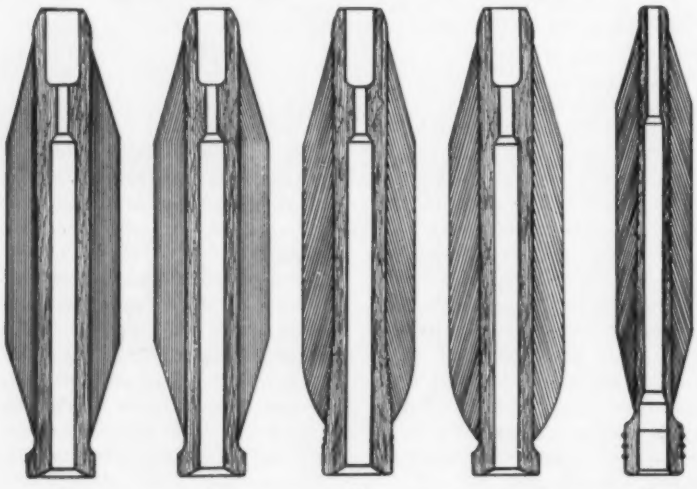
Once the traverse is set, the position of the quadrant does not change—though during the doff run the traverse will change, because the rack and chain hook are traveling toward the fulcrum. The angle of chain from the chain pulley to the quadrant has a decided effect in controlling the stroke of the rockers (see **Fig. 3**).

When the filling cam was taken off, the quadrant was in a low position. The short raceway on the filling cam between heel and toe made this necessary in order to achieve the desired filling traverse. However, the quadrant position will be too low for the straight warp wind because the length of raceway on the warp cam from heel to toe is longer than the heel to toe distance on the filling cam, and the stroke at this point on the warp cam would be too fast. The resultant traverse on the warp bobbin would be too long if the quadrant were left in this position.

The quadrant must be raised for the first "trial and error" setting. Loosen the nut on the bolt that extends through the quadrant arm and raise the quadrant approximately 1½" to 2". The traverse in relation to the bobbin has now been shortened—but it has been shortened in both directions.

It may be necessary to take up on the chain to bring the rail into

FIG. 1. Typical bobbin winds: A, standard warp wind; B, combination warp wind, on regular warp bobbin; C, filling wind, on cone step warp bobbin with bobbin forming attachment; D, filling wind, with No. 5 bottom former on regular warp bobbin; E, standard filling wind.



Courtesy Saco-Lowell Shops

starting position. Invariably this is done to lower the traverse to the desired starting position. However, the next step is to turn the cam by hand until the toe rests in the center of the Pitman roll on the builder. This is the lowest position of the builder.

Note the position of the ring rail in relation to the start. If it is too high, take up on the chain; if too low, let out on the chain. The ring rail, of course, is first unlocked.

Once the proper set on the bobbin has been achieved, bring the rail down again and lock it. Turn the cam by hand until the heel is directly over the Pitman roll. Unlock the rail and bring it up as high as it will go. The length of the starting traverse, or initial traverse, is now known.

If the traverse is still too long, raise the quadrant slightly and position the ring rail again with the toe of the cam in the center of the Pitman roll. This is again done by turning the cam by hand. If the traverse is too short, lower the quadrant and position the ring rail.

When the desired traverse is attained, check twist, draft, and rail gears, and set the pick immediately after starting. The rack must be fully wound out when setting the traverse and at the start.

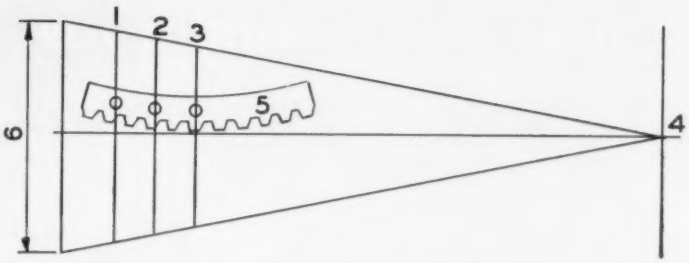


FIG. 2. Effect of positioning chain hook in different holes in rack arm: (1) Length of stroke with hook in first hole; (2) Length of stroke with hook in second hole; (3) Length of stroke with hook in third hole; (4) Fulcrum of builder; (5) Builder rack; (6) Longest outward stroke of builder.

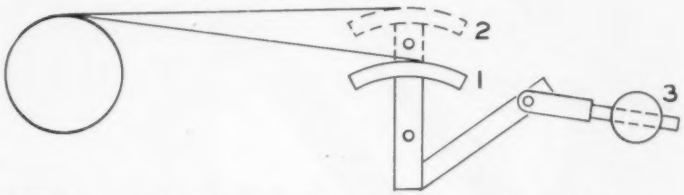


FIG. 3. The angle of chain from the chain pulley to the quadrant has a decided effect in controlling the stroke of the rockers: (1) Quadrant in lowest position—longer rocking motion on rocker arms; note angle of chain from chain pulley; (2) Quadrant in highest position—shorter rocking motion on rocker arms; (3) Weight on rocker arms. Chain pulley is represented by circle at extreme left.

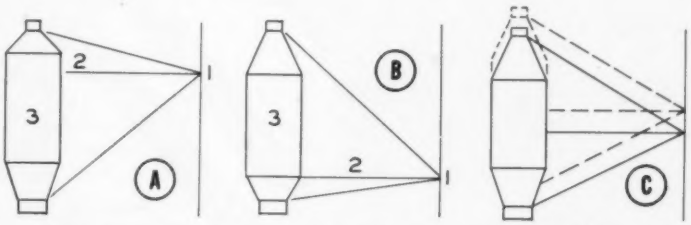


FIG. 4. How taper of yarn on the bobbin is changed by raising or lowering the fulcrum of the builder arm: (A) Unequal taper—too short at the top and too long at the bottom; (B) Unequal taper—too long at the top and too short at the bottom; (C) Relationship of the horizontal center to the bobbin, illustrating why it is necessary to take up on the chain.

Correct Taper. On Whitin frames the desired taper length, top and bottom, is adjusted by loosening the studs on the Pitman roll stand and raising or lowering the builder arm. The relationship of the horizontal center from the fulcrum to the bobbin determines the taper length at top and bottom of the bobbin. Thus, if the horizontal center of the fulcrum was in direct line (center) of the bobbin, taper length would be equal at top and bottom. Picking action controls the length of the tapers.

Tapers from 1⅜″ to 1½″ (top) and 1¼″ to 1⅜″ (bottom) are recommended. However, the taper length desired is almost invariably an individual mill problem, depending on diameter of bobbin, diameter of ring, traverse, and spooling and winding requirements. Many mills prefer equal tapers top and bottom.

The function of the Saco-Lowell builder is almost identical to that of the Whitin. The relationship of builder to bobbin, the winding in or out of the rack on the builder arm (worm), the set of the main pivotal point—the fulcrum—has close resemblance. The adjustment of these builders varies, but the principle remains the same.

The setup of the traverse and the relationship of the horizontal center from fulcrum to bobbin are also almost identical, but the adjustments for taper, top and bottom, show a marked difference between the two builders, though the same results are achieved.

The fulcrum point of the Saco-Lowell builder is on a cross-arm extending into the gear-head of the frame and supported by an additional cross-arm extending the width of the frame. On the older type builders the Pitman roll stands slide forward or backward, not up and down like the Whitin; and can, within limits, be adjusted to slightly raise or lower the builder arm for taper control.

We assume that two warp winds have been built. For the purpose of illustration they have been built incorrectly, and then the necessary corrections made, as shown in **Fig. 4.**

In **Fig. 4A** we have unequal taper—too short at the top and too long at the bottom. Equal taper is desired top and bottom with equal

(Continued on page 265)

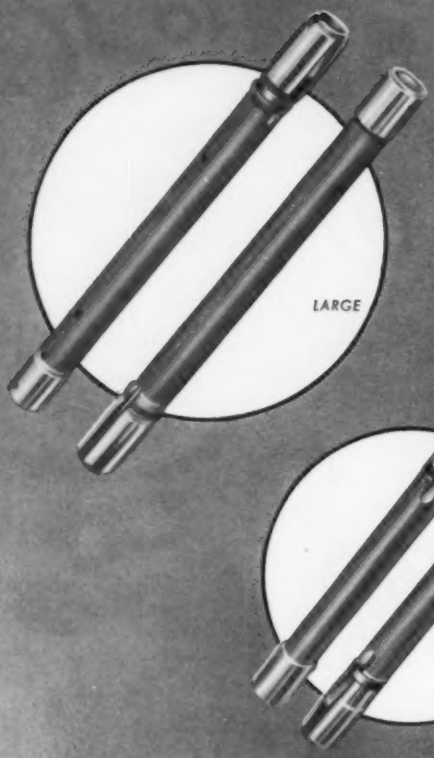
THERE IS NO SUBSTITUTE FOR

SACO-LOWELL BOLSTERS

Don't be misled into believing that all bolsters are alike . . . or that highly engineered bolsters will not give any better or longer service than job-shop bolsters.

The original spindle manufacturer knows exactly how much tolerance to allow at the spindle base, loose-lock step, and upper boss — since he alone has the original bolster specifications.

If tolerances, concentricity and finishes are not of the best in substitute bolsters — What happens? Increased power consumption . . . less effective lubrication . . . vibration . . . bobbins not running true . . . quality of the yarn impaired.



Saco-Lowell's line of McMullan Loose-Lock Step Bolsters result in trouble-free spinning, highest quality yarn and general all-around performance of the highest calibre. In addition, these Saco-Lowell Bolsters are priced competitively — no other bolsters of comparable quality can match McMullan Bolsters in dollar-for-dollar value.

LARGE . . .	Spring type Key type
MEDIUM . . .	Spring type Key type
SMALL . . .	Key type Pin type

For long-term spinning satisfaction, use Saco-Lowell Bolsters on Saco-Lowell Frames. The Saco-Lowell experience and modern methods of manufacture and control are unsurpassed. Ask a Saco-Lowell Repair Sales representative to discuss bolsters with you in further detail.

"There is hardly anything in the world that someone cannot make a little worse and sell a little cheaper — and the people who consider price alone are this man's lawful prey."
JOHN RUSKIN

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60 BATTERYMARCH STREET, BOSTON 10, MASS.
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SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

Author Answers Questions on Seaming Full-Fashioned Hosiery

EDITOR TEXTILE INDUSTRIES:

We have read with great interest the article "This Mill Streamlined Handling of Full-Fashioned Hosiery," by Sam Boyer, which appeared in the December, 1955, issue of TEXTILE INDUSTRIES.

On page 156 you mention that in this particular mill the seaming department is producing an average of 50 dozen daily (in eight hours?). We think that this is a very high production.

We have a small mill with five 32-section Kalio machines, and we started in the hosiery business four years ago.

The seaming department is our bottleneck. Our best seamer is making 28 to 30 dozen in eight hours; the average is 22½ dozen. We must say that we have a high standard, and that all our stockings are seamed inside-out. Further, the stockings are much longer than in the U.S.A. In the grey, size 8½ is 42 inches long, and size 11 is 52 inches long. The finished length of size 8½ is 31½ inches, and size 11 is 39½ inches.

We wonder if you could give us some more figures about seaming hosiery in your country: average and top production, training and term of apprenticeship, etc.

L. TEN CATE
L. ten Cate N. V.
Geesteren-Ov., Holland

► *Mr. Boyer was asked to comment and his reply to Mr. Cate is reproduced here:*

DEAR SIR:

With reference to page 156 of the December, 1955, issue, please note that the article states, "A good percentage of our operators average better than 50 dozen daily." The *department* does not average that amount, and I am sorry if the article was misinterpreted. Actually, the general average for the department, including 20 per cent learners, is 39½ dozen for 8 hours, less two 10-minute recesses, giving 7 hours and 40 minutes working time daily for a five-day work week. Some operators produce from 50 to 58 dozen daily.

Your letter further states that size 8½ is 42 inches long when seamed, but finishes only 31½ inches, with other sizes in the same proportion. This indicates that a great advantage in production could be gained in seaming if the knitted stockings were first preshrunk either by steaming or by dipping in hot water, which facilitates handling during the seaming operation. The steaming process was outlined in the article to which you refer.

Average production for our mill is probably about 25 per cent above the national average. We have had many visits from competitors who came to study our

KINK CONTEST

$100 will be awarded the winner

Send your entry now! This contest ends August 15, 1956

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

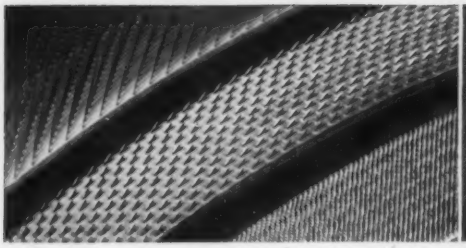
► All contributions must be postmarked not later than midnight, August 15, 1956.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Ga.



Ashworth Tips ON CARDING

No. 30 in a Series

TRENDS IN WOOL CARD CLOTHING

In today's rapidly changing situation we, as a manufacturer of card clothing, have been continually working on new ideas regarding wire foundation and settings, to meet the ever changing conditions with which the woolen mill is confronted. This is particularly true of clothing for the breaker section, since it receives the most abuse and replacements are more frequent. Following are the results of some of our research:—

1. Wire for use in card clothing must be uniform in temper, accurate in gauge, with a combination of hardness, ductility and toughness to resist fatigue. The following types, although not new to the wire industry are now being used in wool card clothing:
   (a) Music Wire—Although higher in price than conventional card wire, this wire is most satisfactory when conditions in the mill call for extra wire strength.
   (b) "AB Wire"—A new product recently developed by our company to stand up under difficult carding operations.
   (c) Stainless Steel—Although this type of wire is not ordinarily associated with wool carding, it has proven far superior to regular or cadmium plated wire, when napping goods that are wet or slightly acid. Its cost is greater than the plated type, but this fact is more than offset by longer life under difficult conditions.
2. Foundations—These must be pliable with a high tensile strength, flexibility and a minimum of stretch.
   (a) With the use of coarser wire on the breaker section of the wool card, additional plies (i.e. 6 ply flexifort) in the foundation have been necessary. They give greater support to the teeth and prevent setting back, or loss of pitch.
   (b) The trend is away from the use of leather foundations for lickerin and fancy clothing. This is because tooth movement has a tendency to elongate the holes in the leather; also because leather varies considerably in firmness and susceptibility to stretch. A fabricated foundation (i.e. Dresco, Balata, etc.) is frequently being used for lickerin clothing. For fancies more resilient types are being used, plied with rubber cement and having a felt or synthetic rubber face.
   (c) Felt face foundations, such as 6 ply regular felt with rubber insert, and 6 ply (2 PW) impregnated felt, are being used to a greater extent. When set with special types of wire and with the correct distribution of points, they give added support to the staples and run for a longer period without stripping.
3. Settings—"Settings", as applied to card clothing, means the number of points per square foot set in the foundation, in accordance with a predetermined pattern. Many years of experimental work by textile mills and the card clothing manufacturer have established standard wool card clothing settings.
   (a) Because of the many types of synthetic fibres, and blends of these with wool, variations from the standard settings are sometimes necessary. For instance, a #28 wire is on occasion used in a #30 wire setting.
   (b) Deviation from the generally accepted combination of wire size and settings, however, should be attempted only when the characteristics of the stock demand it.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
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3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

production methods; they went away satisfied that our published data were correct. We have no secret methods of seaming and exchange visits with our competitors, often to our own advantage in learning new methods.

A trainee is selected on the basis of adaptability and background. She is placed with a skilled instructor for a few days, who checks her position, seating, holding of fabric, and other details essential in teaching. Sewing machines are run at about half speed for the first day or two, but are rapidly brought up to a speed of about 4200 rpm. We use Union Special hosiery seamers, but have also used Singer.

Most operators can seam 21 to 30 dozen by the end of seven weeks, and are placed at this time on a piece rate which equals about 25 per cent above learners' rates. Some operators make more than 2½ times the learner rate.

We feel that young married women, from about 18 to 28, with perhaps one child, make the most reliable operators.

Among the other articles which I have written for TEXTILE INDUSTRIES there are two others which you might find interesting in connection with your questions. They are "Ten-Point Program to Control F-F Hose Length," which appeared on pages 120-123 of the July, 1955, issue; and "Training Seamer Operators," which was published in April, 1953. SAM BOYER

Printers: Reinforced Doctor Blades Can't Come Loose

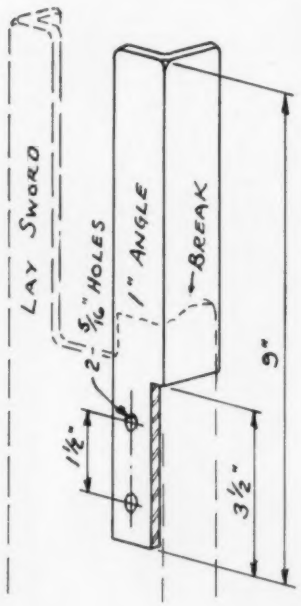
OSCILLATING doctor blades at the Arnold Plant, USF-Aspinook Finishing Division of Gera Corporation, Adams, Mass., have been reinforced with the angle irons shown in the accompanying photograph (arrows). Reinforcement guards against the printing machine part chattering loose.—*Staff.*

HOW OTHER MEN MANAGE

In-Place Repair of Lay Swords—Here's How

EDITOR TEXTILE INDUSTRIES:

Occasionally the top part of a sword arm on older-type looms will get broken off if the reed cap is tightened too much, or if the reed cap becomes loose. It is not always convenient to remove a lay sword with a full warp in the loom, so we repair it in place as shown in



the accompanying photographs and sketches.

We take a piece of 1" angle iron 9" long, and cut 3½" off one side. On the part left we bore two 5/16" holes about 1½" apart. We fit this down the side of the sword arm and bolt it to the arm by boring and tapping two holes.

The angle iron that extends up from the cut part fits over the break, and the reed cap fits neatly in it.

The repair takes a shop man only a few minutes of time; then

(Continued on page 193)

always uniform and backed by Keever Service

Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
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GREENVILLE, SOUTH CAROLINA

THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

Processors of corn, wheat and blended starches for industry since 1898

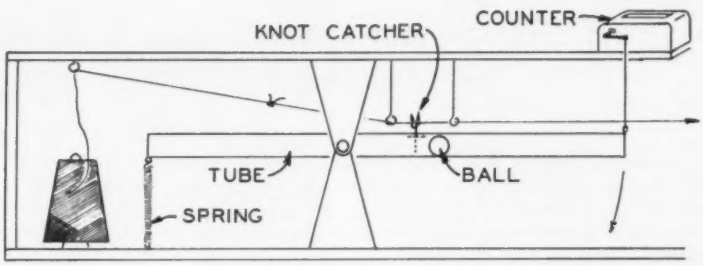
(Continued from page 191)
when the warp is out the sword can be removed and replaced. If the broken part is lost, we just have the repair part welded onto the sword arm, leaving the bolts in place.

CONTRIBUTOR No. 8818

No Electronic Parts in this Knot and Slub Counter

EDITOR TEXTILE INDUSTRIES:

Here are the details of a mechanical knot and slub catcher which we have made at our mill. It operates entirely without electronics. Details can be seen in the accompanying sketch.



A tube is placed and balanced on an axle. A steel ball is inserted in one end of the tube, and a spring is attached to the other end of the tube.

The yarn to be tested is taken from a cone or other package and through suitable guides to a knot catcher. The bottom of the knot catcher has a pin which is free to slide in a groove in the tube.

When a knot in the yarn reaches the knot catcher, it causes the knot catcher to slide forward. The pin on the bottom of the knot catcher strikes the steel ball, causing it to roll forward in the tube, tipping the end of the tube downward.

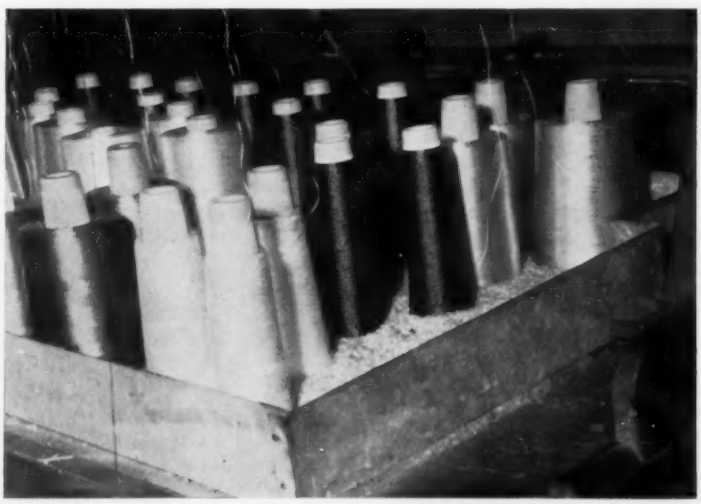
A connection from the end of the tube to a counter is also pulled downward, causing the knot to be registered on the counter. The downward movement of the end of the tube also releases the knot from the knot catcher, permitting the yarn to continue its forward movement.

The spring at the yarn feed end of the tube causes the tube to return to a horizontal position, ready to count the next knot.

CONTRIBUTOR No. 8859

Rice Prevents Undercatching of Coned Filament Yarn

THESE CONES contain 300-denier dyed rayon and are creeled behind a f-f knitting machine designed to produce neckwear at Paul O. Kiessling & Co., Glendale, N. Y.



When the cone has been prepared by the dyer who supplies the yarn so that the bottom edge of the yarn layers are not exactly flush with the open edge of the paper cone, the heavy yarn tends to drop under the cone, catch, and break out. Attempts to eliminate the problem by placing felt disks beneath the cone to fill the gap between the lower edge of the yarn layers and bottom of the cone were not successful.

The problem was solved by filling the bed of the creel with rice, which fills the gaps effectively and prevents catching.

Plant officials do not recommend this idea to mills which have mice and do not have a cat.—*Staff*

Does chelation actually represent a new kind of chemistry? Are the possibilities as exciting as many seem to think? This series endeavors to answer these—and many other—pertinent questions on this fascinating subject. It is hoped chemists, engineers and purchasing agents alike will find these answers helpful. Now on to . . .

DOW

The Chemistry of Chelation: Part II

Versene and Versenol Series · Descriptions and Uses
A measure of Value · A Suggestion

To review in capsule form: Part I introduced chelation, offered examples of typical chemical reactions, applications, and discussed future possibilities. You will remember that a chelating agent is defined as a chemical which surrounds metallic ions with a multiple-ring structure that keeps the metal chemically inactive and holds it in solution. The applications in industry are many—and new ones are being found almost daily. That, of course, brings us to another consideration: different chelating agents for different uses.

VERSENE® AND VERSENOL®

Chelating agents are commercially available from Dow as 15 different products—all based on aminocarboxylic acid derivatives. Among these, wide spectrum performance is shown by two series of products. The Versene series of products (Versene® 67, Versene 100, Versene Powder, Versene Beads, Versene 9 and Versene Acid) is based on EDTA* and the sodium salts of this material. The Versenol series (Versenol® 120, Versenol Powder and Versenol Beads) consists of various physical forms of Na_3 HEDTA**. The Versene series, except for Fe+++ in the alkaline pH range, is generally the stronger series of the two (more completely chelates the last traces of metal). The Versenol series is notably stronger for Fe+++ in the mildly alkaline pH range and is usually cheaper on a performance basis if the consumer can tolerate the weaker chelate structure. Versene is the strongest, most stable commercially available chelating agent. It is the one with the greatest number of successful applications.

DESCRIPTIONS AND USES

Here are three Dow chelating agents together with their descriptions and uses:

Versene 100 is a concentrated aqueous solution of a technical grade of the tetrasodium salt of EDTA . . . widely used in textile processing, detergent formulations and metal cleaning.

Versene Acid is a dry form of EDTA technical. It is used in many operations as a raw material for the preparation of various derivatives, such as metal chelates, salts (K, NH_4), esters and many others.

*Ethylenediaminetetra acetic acid

**Trisodium salt of N-hydroxyethylethylenediaminetriacetic acid

Versenol 120 is a concentrated aqueous solution of a technical grade of Na_3 HEDTA. It is also very valuable to detergent, textile and metal-cleaning processes.

Naturally these three specific agents are not the answer to *every* problem. That's the reason for the many other Versene products, to be discussed in Part III.

A MEASURE OF VALUE

A measure of the broad performance capacity of a chelating agent can be obtained from its *chelation value*—determined on a reference metal. Calcium is used as the reference metal under the standard test proceedure accepted by the industry. Dow prefers this "performance basis". It specifies more clearly what chelating agents *actually accomplish* than such terms as "% solids" and "% active". Consequently, the "100" in Versene 100 means that one gram of this product will chelate 100 milligrams of calcium carbonate in accordance with the standard test procedure. By the same token, one gram of Versene 67 will chelate 67 milligrams, and so on.

A SUGGESTION

Two closing thoughts: Dow wants to help in any way possible to further develop the applications for chelation. Also important, Dow would like to hear from *you*—your thoughts, reactions, suggestions. Please inquire about any problems or ideas you may have. Information or actual technical assistance will be forthcoming promptly. Write, on your company letterhead, to Technical Service and Development, Dept. SC 912L, THE DOW CHEMICAL COMPANY, Midland, Michigan.

THE NEXT TWO TOPICS IN THIS SERIES

PART III
July
August
September

Specific chelating agents for specific applications (agent for iron control depends on pH—Versene Fe-3 Specific® for iron and transition metals on the alkaline side, Versene T® for iron in presence of free caustic—other solutions to special problems).

PART IV
October

Applications in specific industries (formulation of alkaline cleansers—stabilization of hydrogen peroxide and Kier boiling in textile processing—uniform control of trace metal catalysts in polymerization of synthetic rubber—other industrial applications).

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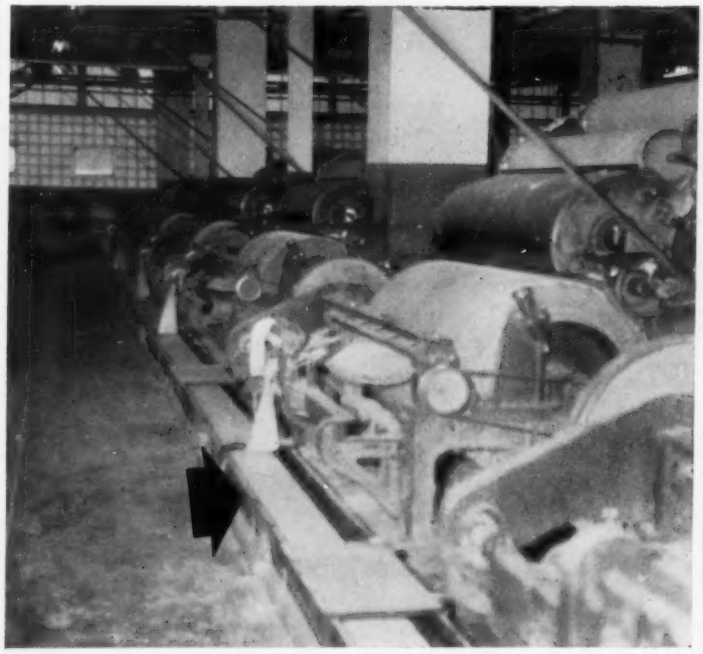
DOW

Worsted Card Deliveries Averaged by Traveling Belt



THIS TRAVELING belt carries delivery from seven double cylinder worsted cards to one ball wind-up. Installed at Livingston Worsted Mills, Holyoke, Mass., the conveyor is used because it averages out stocks and weight of ribbon deliveries.

Reader Says Yarn Conveyors Should Have Drop Door

EDITOR TEXTILE INDUSTRIES:

I am a machinist in a textile mill where a yarn conveyor was installed a few years ago. Now we are purchasing a second conveyor from another company, and I have fond hopes that it won't give us the trouble that the original one does.

When the first conveyor was new, it was supposed to run by a system of weights—but it usually didn't. I would like to make a suggestion to builders of these conveyors that would save many manhours for us in the mill.

These conveyors should have a drop door on the receiving hopper, so that when the bucket comes up it would open the door, and when it goes down it would close the door. Doffers are always dumping a box of yarn into the hopper when the bucket is on its way back up, a bobbin misses the bucket, and so a man from the shop has to crawl in and pry the yarn from behind the roller.

My drop door idea would prevent the yarn from falling from the hopper until the bucket came up and opened the drop door.

CONTRIBUTOR No. 8842

HOW OTHER MEN MANAGE

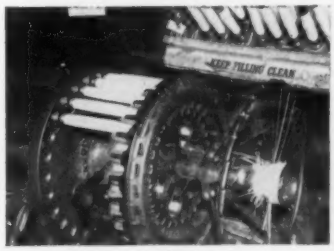
Spring Keeps Filling Tight on Thread Guides

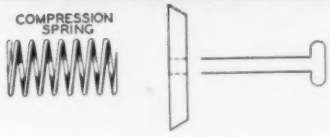
EDITOR TEXTILE INDUSTRIES:

The accompanying photo and sketch illustrate a kink which we use on our looms to keep the ends tight on the thread guides.

We turn down a four-inch piece of hardwood and bevel it, then give it a high polish. We then bore a hole through the center, so that it will fit over the shaft on the thread guide.

We next make a spring from light wire. This is put over the shaft first, then the wooden part is slipped on. As the thread is wound on the shaft it forces the





wooden plug against the spring, and keeps the ends from slipping on the shaft and coming loose.

The kink works especially well with glass yarns of fine and heavy counts. The spring does not show in the photo, since it is compressed to its limit by the yarn on the shaft.

Springs can easily be made on a small lathe by inserting a shaft of the desired size, tightening the end of the wire in the chuck with the shaft, and holding the wire tightly while the lathe winds it on the rod.

CONTRIBUTOR No. 8840

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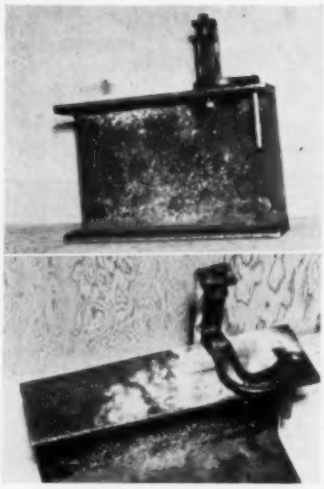
Jig Holds Transferrer Securely for Welding

EDITOR TEXTILE INDUSTRIES:

With the fabrics we are weaving, bobbin transferrers quite often work loose and break. The break is usually at the round end, where the transferrer fits onto the transferrer stud, but it also breaks on occasion right in the center.

The smallest difference in the shape of the transferrer makes it difficult to set the thread cutter and hammer. My fixers were leaving the welded ones in stock and using only new ones, and I also suspect that some broken ones were not turned in for welding.

We overcame this difficulty by devising a jig for welding the transferrers, which is shown in the accompanying photographs. The transferrer is held firmly by a set screw in the top, with the end pin through a hole in the jig; there is also a set screw to hold the U-shaped part.



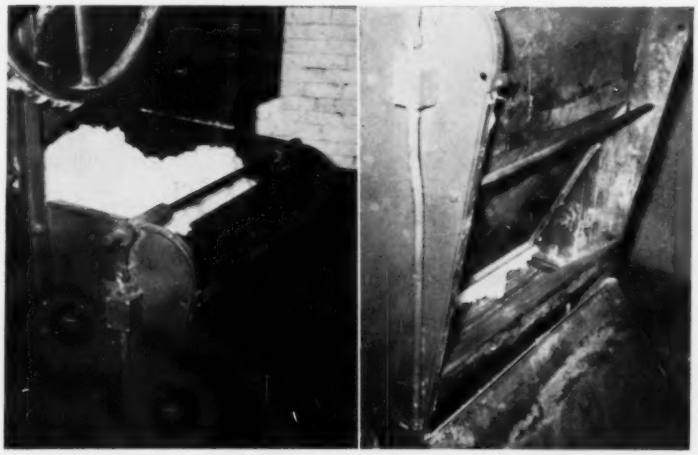
Sometimes the transferrer is welded in the jig; or, if this is not practical, it is welded on the workbench and then put into the jig while still hot. In either case the transferrer can't change its shape as it cools.

The materials required to make the jig are a one-foot piece of 8" channel iron, and a seven-inch piece of ¼" by 1½" flat stock with a 1½" bend on the end. The flat stock is bolted to the channel iron with the bend to the front. A ⅝" hole is bored in the bent part of the stock and is used to screw the upright part tightly to the casting.

Another 5/16" hole was bored in the corner of the channel iron to take the pin end of the casting. Still another 5/16" hole was drilled and tapped where the U-shaped part of the transferrer rests flat on the jig.

CONTRIBUTOR NO. 8854

Picker Door Cuts Fire Losses



EDITOR TEXTILE INDUSTRIES:

The drop door shown on the back of the picker in the accompanying photographs has prevented considerable losses from picker fires at our mill. In case of fire in the hopper, the picker tender can drop the door and quickly drag out the cotton.

The door has reduced losses both of picker aprons and of cotton, and has also made the picker tender's job safer.

CONTRIBUTOR NO. 8860

Tip for Shrink Fitting Metal Parts

TO OBTAIN a good shrink fit on metal parts without discoloring them by heating with a blowtorch, soak the outer part in boiling water for a few minutes; be sure the inner part is cold, and insert it with a light force fit. The outer part will shrink enough to make a good tight fit, without discoloration or shearing of the parts. —*Contributed.*

Don't Forget!

TI's Kink Contest Closes

August 15, 1956

Send in Your Entry Now

Details Are on Page 187

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Fewer frame stoppages . . . faster speed adjustment — both are assured when you specify Allis-Chalmers textile drive equipment in your spinning room.

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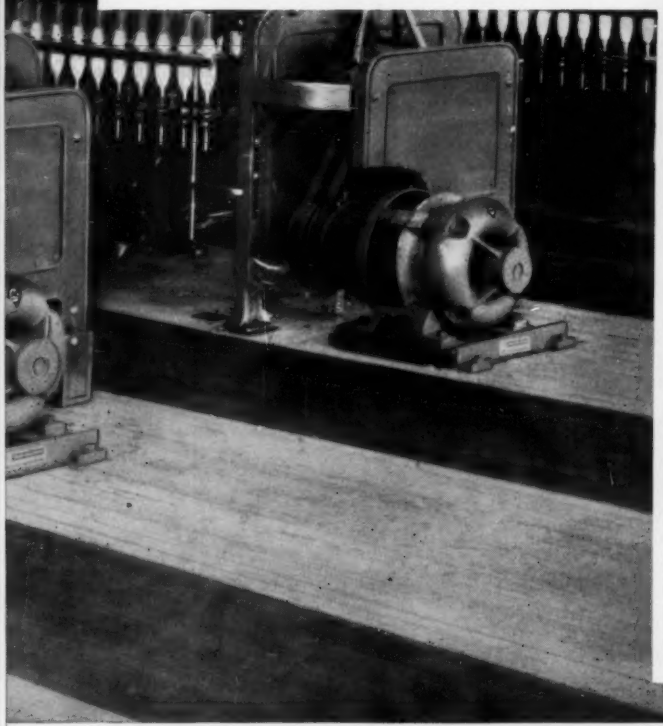

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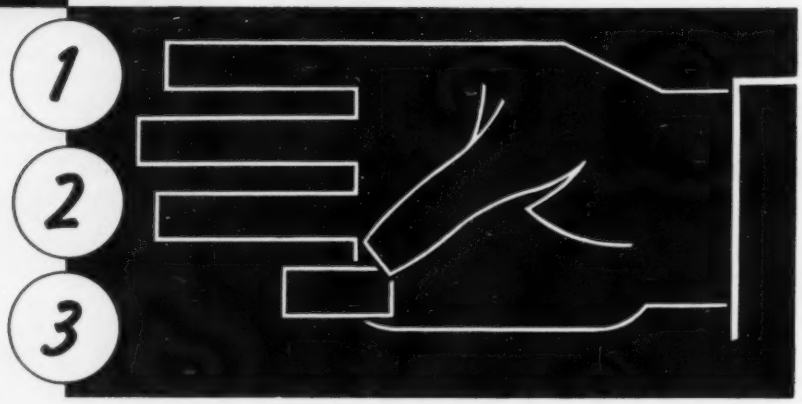

1 **Huyck carefully selects and blends only the** finest of **long staple fibers** — the **best obtainable** from the world over.

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Aside from the big advantage of *longer service life* — Huyck's *new . . . preconditioned* Compressive Shrinkage Blankets also reduce break-in time . . . minimize costly reprocessing . . . assure smooth finish . . . hold to specified dimensions . . . and require fewer machine adjustments. Combine all these *plus features* and you'll see why so many mill operators say—Huyck offers the ideal "blanket policy," protecting against high shrinkage costs, wasted time and trouble.

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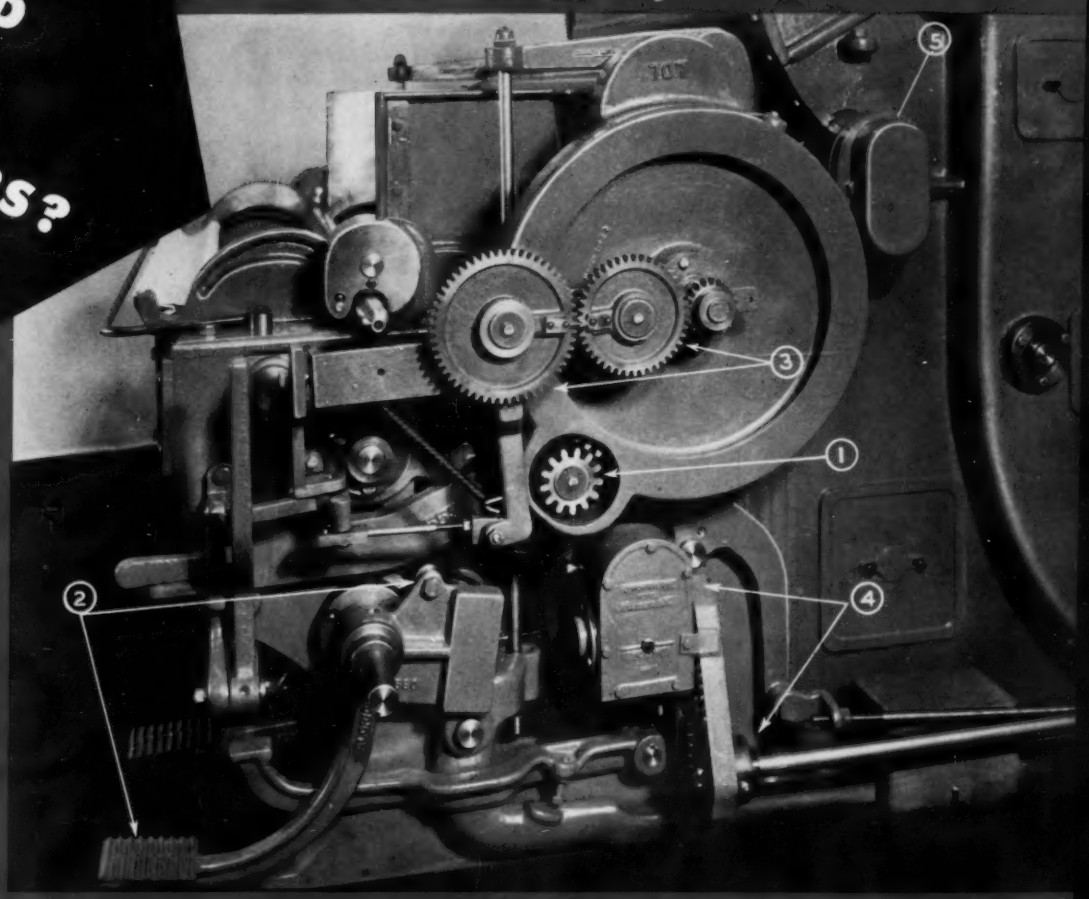

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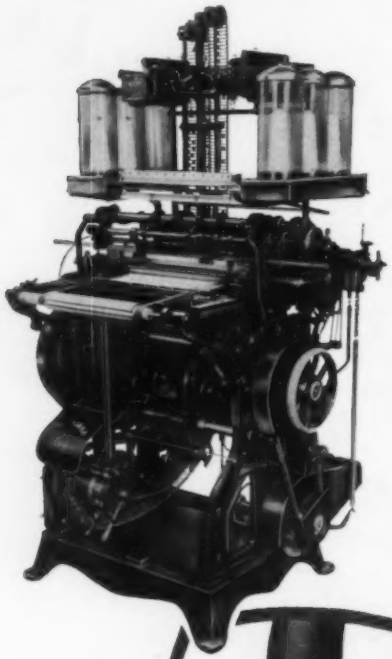

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Solid Color Pattern Half Hose

Knitter + Fixer = Quality Producing Team

BY WINSTON SHEWMAKE

EXCLUSIVE

PRODUCTION of superior quality, solid color, seamless socks requires the knitter and the fixer to coordinate their efforts and work together as a team.

A good solid color pattern knitter and fixer are operatives who determine the quality and quantity of goods obtained from a battery of solid color machines.

Final quality is always determined by the way the goods sell. Buyers and consumers of the socks determine whether the product is acceptable to the public. Faulty socks will not sell at premium prices anywhere.

However, the manufacturer cannot wait for public reactions to determine whether or not his product is going to sell. He should have in his organization supervisors and operatives who know before the socks leave their particular department or operation whether the sock being produced is of premium quality or of substandard quality. If the sock being produced is a quality product, sales possibilities become more affirmative.

How then is quality determined? What do the buyers look for in a solid color sock? What do the consumers look for? A "quality definition" provides the answer to these questions:

A premium grade, solid color pattern sock must be (1) of correct size; (2) of correct weight; (3) balanced in construction; (4) correct in color; (5) straight-grained; (6) free from openings (bird eyes); (7) clean; (8) pliable (without excessive floats); (9) absorbent; (10) properly interlocked.

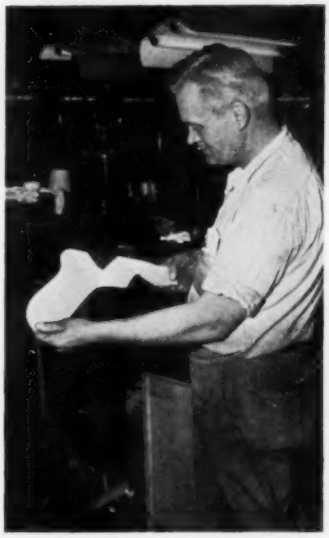
To produce socks which conform to this requirement, knitters and fixers alike must work hand in hand.

The fixer makes all the necessary repairs and adjustments. He is the "captain" of the knitter-fixer team and directs its activity. He should know what quality is desired and how to expedite production accordingly.

Some fixers, who lack training, experience, or proper supervision, do not fully understand what level of quality is expected. Worse yet, there are those, some in supervisory positions, who know what the expected quality is but do not know how to obtain production at the specified quality level.

The knitter should detect any flaws in the socks he handles and make the necessary correction or call for aid from the fixer if the trouble is mechanical.

Here's how the knitter and fixer fit into the quality sock producing operation:



CHECK SOCK SIZE regularly, Mr. Fixer, and adjust machines promptly when socks do not fit form.

Correct Size. Socks which do not meet size requirements also fail to fulfill quality specifications. No one wants to wear a sock which does not fit properly.

After the battery of machines has been cleaned at the beginning of each shift, the fixer should immediately check the size of each sock with a size form and make the necessary machine adjustments to insure the sock fitting the form and consequently being the correct size.

Once the machines have been properly adjusted from the standpoint of mechanical adjustments, the fixer will probably find it necessary to handle only a very few socks from the individual machines for the rest of that shift. It is the knitter who then must uphold and maintain the quality of sizes.

Naturally, the knitter cannot form fit every sock produced, but a continuing check for slubs, unbalanced reciprocation, yarns not set on properly in relation to guides, wrong counts of yarn, lint, damp yarns, and other factors will help the knitter keep size quality high.

Correct Weight. Quality in weight is the resultant of two factors: (1) proper number of courses and (2) the correct size or count of yarn.

Knitters must be very diligent in placing the correct size of yarn on the machines in their respective places in relation to the pattern being produced. Also, much care must be exercised to be certain the yarn is threaded through the

ARTICLES IN THIS SECTION

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NEW TWISTS in stretch yarn processing

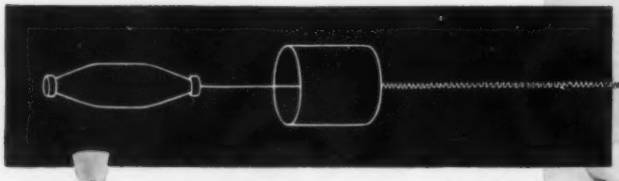
Universal's complete service covers every factor from pirn to finished product

Universal is the recognized headquarters for machines especially developed to handle all the popular new bulk and stretch yarns. Besides the women's wear shown here, countless garments for both sexes and all ages are made of new "magic" yarns processed on fast, economical Leesona Machines.

To aid you in producing yarns with highest sales potentials, the Universal Yarn Evaluation Department has been established. Its purposes are: to set up standards for processing and testing stretch yarns; to provide mills with samples; to suggest test procedures and appraise samples from mills; and to check new market possibilities.

And in addition, Universal offers its famous Leesona Pay-As-You-Profit Plans — for long-term purchase or lease of new machines without weakening your financial position.

Investigate these valuable aids to successful stretch production — and profits. See your Universal representative or write direct.



23.5.28

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proper feed finger.

Knitters in most mills have no control over the number of courses since this is varied by inserting or removing links from the pattern chain. In plants where the knitters are required to change their own sizes, they should be careful to insert or remove the correct number of links to obtain the correct size.

Incorrect weight and sock construction sometimes result when links have been removed from the heel and toe, thus producing a shorter gore. A sock made on the S.C.P. or S.C.O.P. machine and having a gore which contains less than 15 lines of fabric (or needles showing) is of inferior quality because the heel and toe are not full. This type of sock, if size and construction relationship is maintained, will be tight across the instep and also will be even more likely to be "eaten up" by the heel of the wearer's shoe. Buyers and consumers do not like such shortcomings in the goods they buy.

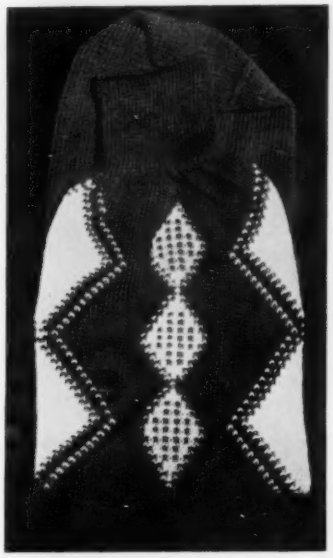
Balanced Construction. Most all of the solid color pattern machines have either two or four stitch cams and the cylinder reciprocates during the knitting cycle. Unequal adjustment of either stitch cam or accompanying end, poorly adjusted needle support cam, and/or maladjustments in the sinker cap and bumper screws will result in uneven stitches.

The quality of socks made under these conditions is below standard because the reciprocated sections will be rough while the straight run sections will be smooth and even—obviously a very undesirable relationship. Knitters should be on the lookout for unbalanced knitting and flag the machine immediately upon noting the trouble.

Correct Color. In solid color pattern sock manufacture, color blending, matching, merging, and contrasting are of vital importance.

The knitter of solid color socks should not be color blind in the least, because he is almost totally responsible for maintaining correct color combinations. These combinations are usually predetermined by a color chart.

Both the knitter and the fixer should know how to use color charts and also be able to thread up the machines accordingly.



CORRECT COLOR, balanced construction, and correct weight are essentials of a premium quality sock and require a vigilant knitter-fixer team.

Too, it is of great importance to run the same batch number of a color together with similar batch numbers, unless different batch numbers merge satisfactorily upon testing.

Straight Grained. Bowleg knitting is usually slight when it starts; and if the knitter is not careful, this defect will go unnoticed for some time before it is corrected. Bowleg knitting is usually caused by uneven yarn tensions, worn or wrong setting of stitch cams, and especially by the sinker holding brass moving up on one side of the cylinder.

Free From Openings. Undesirable openings include loop-outs, balloon-outs, dropped stitches, bird eyes, button holes, lap misclosures, cut holes, and any other irregular opening.

Keeping take-up and porcelain guides free from lint and slubs will reduce greatly the number of loop-outs and cut holes (other than scissor cuts). The correct stacking, or tailing, of yarns plays a vital role in the loop-out problem. The knitter should not place an excessive supply of yarn on his machines.

STRAIGHT-GRAINED construction, free from openings such as a bird's eye (arrow) must be maintained if high quality merchandise is the goal.

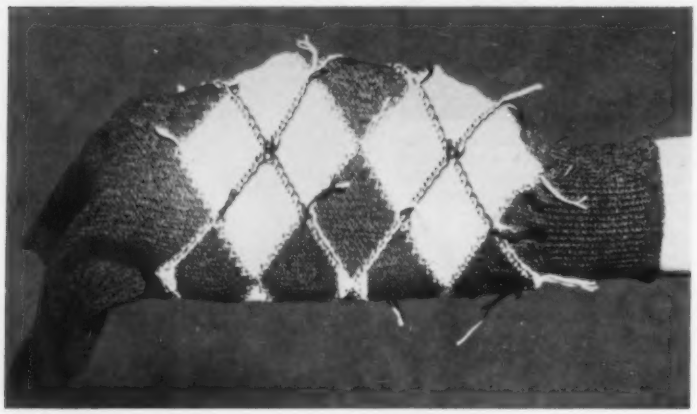
Tailing a large cone of yarn on top of another large cone is inviting trouble of various kinds—for example: uneven pull, break back, tight stitches, and lint accumulation on the lower cone of yarn with consequent slub formation. A good rule to follow is: Do not tail any yarns which still measure ½ inch from the cone (standard 1 lb cone).

Pliability. Too many yarn floats or a yarn which is too heavy will reduce sock pliability.

Many pattern designs on solid color machines, except V.I.P. machines, use floats excessively. This may be satisfactory so long as there is sufficient lateral pliability left, but too many floats will make the sock so rigid that it is difficult to pull over the heel and instep. If such difficulty is experienced, another pattern employing fewer floats or no floats at all should be made.

Clean. Dirty or spotted socks are

TOO MANY YARN FLOATS reduce pliability. Many patterns on solid color machines (except V.I.P.) use floats excessively.



UNSPLICED ENDS and floats, or ends trimmed too close to body of fabric hasten ends pulling through and making holes during wear, thus making a bad impression on the consumer.

not premium quality socks, even though all other quality requirements have been fulfilled.

The fixer can help keep the socks clean by lubricating the knitting machine parts properly but not excessively. He should be careful not to get oil or dirt onto the socks or yarns when cleaning the machines.

The knitter and fixer should never handle socks with dirty or oily hands; neither should they let the socks fall on the floor nor against the machines. Dirty, oily, or spotted yarns should never be put onto the machines.

Absorbency. The type of yarn used determines absorbency. Socks which will not absorb moisture will, of course, cause a wet foot—an undesirable condition to anyone, especially to those customers who are troubled with athlete's foot, or similar ailments.

The purchase of yarn is not generally the responsibility of the knitter and fixer, but still it is an important consideration in the producing of premium quality socks.

Properly Interlocked. Ends of yarn pulling through the knitted fabric and thus resulting in holes impress both the buyer and the consumer adversely as much or more than any other factor, because the sock appears good at first sight but will not stand up under stretch and natural wear. Floats and unspliced ends, or ends trimmed too close to the body fabric, are primary producers of this defect.

Knitters should be careful not to trim the various yarn ends too closely. Fixers should see that all ends are spliced or secured into the fabric.

As a general rule, a plant in which quality knitter and fixer teams are functioning can be spotted immediately. Observe a battery of machines for only a few minutes. If there are very few socks in the individual machines, if there are no empty cones on top of full cones on the machine, if there are no empty cones on the floor, if slubs are not found in the take-up tensions, if large and excessive amounts of yarn are not tailed onto other large cones, and if there is no waste on the floor, chances are that there is a quality knitter and fixer combination at work.

Knitters and fixers should be consistent in their efforts to produce high quality socks with a day by day follow through, never becoming careless.

Personality, mechanical skill, and diligence go a long way in producing the finest quality goods. If knitters and fixers combine all three, they are more likely to succeed as a quality producing team.

Crepe Paper Cuts Housekeeping Costs in F-F Mills

STAFF PREPARED EXCLUSIVE

ABSORBENT crepe paper mats or pads are currently doing an excellent job of simplifying the housekeeping task in full-fashioned hosiery mills. Also, cost of this operation has been cut considerably in mills using the mats.

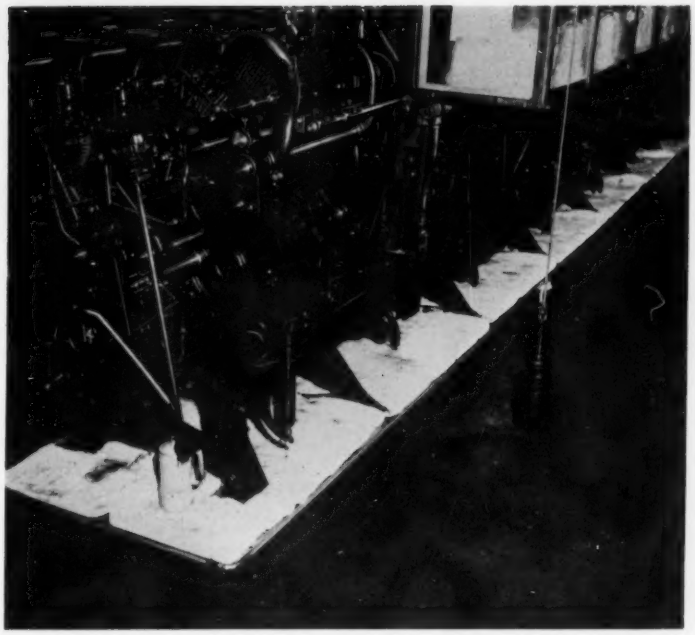
The mats* are placed under the full-fashioned machines to soak up oil and drippings which would otherwise fall into the drip pan. Requiring replacement about every

30 days, the mats practically eliminate the need for cleaning oil pans or drip pans underneath the machines. Also, appearance of the work area is much improved by the clean, white mats.

At Belton (S. C.) Hosiery Mills, one man worked 24 hours each week on the dirty and tedious job of mopping out oil pans. No such difficulties are now experienced, because it is a simple matter to place the absorbent mats under the machines and collect them occasionally for replacement.

Cost of the mats is about one dollar per knitting machine per month; thus, a worthwhile saving in cleaning costs is realized.

*Trade name for the mats is "CelluCrepe," and they are supplied to this mill by Cellulose Products Co., High Point, N. C.



Preboarding Form Truck Saves Time

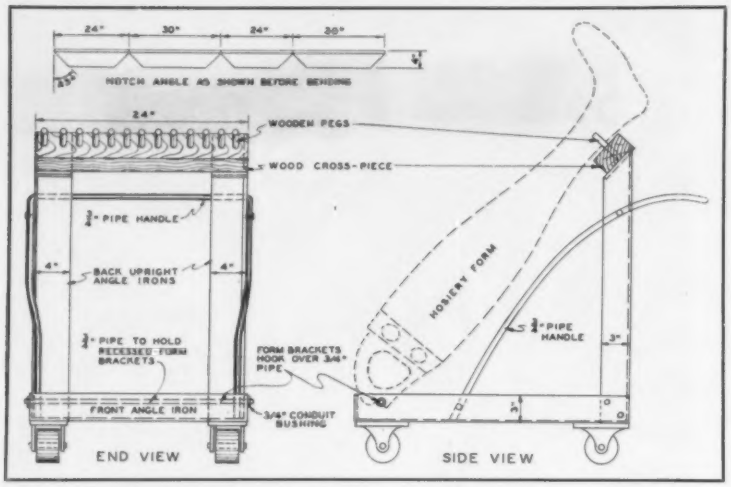
BY HENRY EASON
EXCLUSIVE

WE HAVE several preboarding machines in our preboarding department, and each machine has two carriages that hold 12 forms each. The forms must be exchanged frequently due to changes in sizes of hosiery being processed.

It is not practical to place extra sets of forms at each machine; consequently the operator or foreman had to take one form at a time to the spare rack located at one end of the large room, and then bring one form at a time back to the machine. The reason for carrying only one form at a time is that forms are bulky, weighing from 9 to 11 pounds each (depending on size), and are approximately 54 inches long.

A practical solution to the costly problem was a light but substantial truck for hauling the forms. In actual use, the truck is taken to the preboarding machine, and the 12 forms from one carriage are loaded on the truck and taken to the spare rack and unloaded. The 12 forms, ranging in size from 8½, 9, 9½, 10, 10½, and 11, are selected from the rack according to size desired, then quickly hauled to the machine and placed on the carriage for instant use. Although two loads are required each way for a complete change, without the truck 24 round-trips were required to accomplish the same purpose.

The list of materials for truck construction is as follows: one piece angle iron 3″ x 4″ x 9′, two pieces angle iron 3″ x 4″ x 2′-6″, one length conduit pipe ¾″ x 10′, one piece lumber 2″ x 4″ x 2′, two 4″ swivel casters, two non-swivel 4″ casters, 16 stove bolts and nuts ¼″ x ¾″ long, four stove bolts and nuts ¼″ x 2¼″ long, four stove bolts ¼″ x 1½″ long, 24 plain ¼″ washers, 24 lock ¼″ washers, 13 wooden pegs or dowel pins ⅜″ x



CONSTRUCTION DETAILS of the preboarding form truck.

3" long, also two size ¾" ells if unable to bend conduit pipe accurately to form the handle.

The angle iron is cut as indicated in the accompanying sketch, and then bent to form a base size 24" x 30". The bases of the casters bolt to angle iron overlapping the diagonal cuts, so further bracing is unnecessary. The pipe handle is bolted to the base and also the upright angle irons as shown in the sketch, making the entire framework very rigid. The reason for using the wood cross-piece at top to support the metal forms is that the forms must never strike against any metal object that might cause a nick or burr on them. Such damage to the forms might ruin the hosiery.

The trucks are light and easily handled around the machines, as the two swivel casters allow it to be turned on short radius. There are no disadvantages to this size truck, but no one should try building a larger truck. We tried one and it turned out to be a "white elephant."

It happened this way: A truck was designed to hold a complete assortment of forms of all sizes. It had handles on both ends and was a master-piece of design. However, when it was loaded as planned it took four men to push the estimated eleven-hundred pound monster. So if any reader plans to build a truck, better stick to the size shown for easy handling.

F-F Hosiery Mill Modernization Inadequate, Survey Shows

SOUND merchandising methods, improved machinery, and aggressive management were offered recently as the means to a brighter future for the full-fashioned hosiery industry. This recommendation was contained in the "Statistical Survey" for the year 1955 which is published annually by Textile Machine Works of Reading, Pa.

A continuing decrease in the number of full-fashioned hosiery knitting mills and the number of full-fashioned knitting machines in place characterized the year 1955, the Survey reported.

A net drop of 108 mills resulted in a new total of 556 mills at the end of 1955, it was stated. Last year's drop in the number of machines in place amounted to 1,120, bringing the total at the end of the year to 6,836.

The mills are not maintaining an adequate modernization program, according to the report. Given as basis for this opinion was the fact that the median age of machines in place at the end of 1955 was 7 years 3 months, whereas in 1954 it was 6 years. "New equipment is not being bought to take up the slack of the present in-place machinery becoming older," the Survey said. "Regardless of market conditions, this is an undesirable trend."

Hosiery Mill Statistics. Also contained in the Survey were the following additional facts regarding the status of the U. S. full-fashioned hosiery industry:

(1) 70.7% of the machines in place are in the "new to 10 years old" age category.

(2) 31.2% of the machines are 60 gauge. At the end of 1955 only 9.6% were 45 gauge, compared with 13.6% in 1954.

(3) 65% of the machines are in the southern states; 35% are in the state of North Carolina.

(4) 123 mills were liquidated during 1955 and 15 new mills were established. 44% of the liquidated mills were located in Pennsylvania.

(5) Pennsylvania continued to lead with 221 mills located there; North Carolina was second with 138.

Full-Fashioned Outerwear. There were 156 more full-fashioned outerwear knitting machines in place at the end of 1955 than were reported for 1954—bringing the total to 360, according to the Survey. Total machine sections were 3,842, or an average of about 10.7 sections per machine.

More than 80% of these machines were of the 21 gauge type. 10-, 12-, and 13-section machines appeared to be most popular.

33.3% of the machines were in Pennsylvania. Of the 79 mills operating full-fashioned outerwear machines, 73.5% were in Pennsylvania, New York, and New Jersey.

How Nicetown Dyes Orlon Sweater Strips

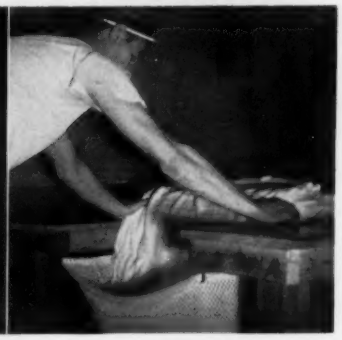
STAFF PREPARED
EXCLUSIVE

STRIP DYEING is a batch process started about eight years ago by hosiery dyers who added nylon sweater dyeing to their production and used conventional hosiery equipment, and who, for reasons of convenience and economy, chose to dye these fabrics in short strips rather than as whole rolls.

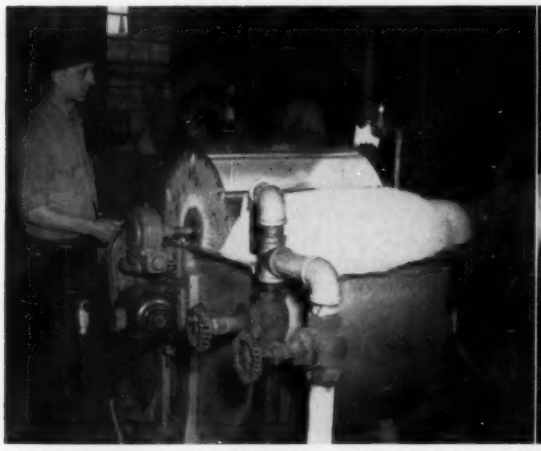
Today, sweater dyeing has shifted to Orlon, and has grown to the point where it is important enough to set up a specialized department to handle it. Nicetown Dye Works, a Philadelphia specialist in stock, top, and yarn dyeing of a wide fiber range, has recently done this. These photographs show the flow of materials.

While the equipment can be used for dyeing full-fashioned sweaters, strips from interlock knitting, and jersey knitting, so far the bulk has been strip dyeing.

1. ORLON INTERLOCK AND JERSEY enter plant either on rolls or in strips, and dye orders are written for 25- to 375-pound quantities. Goods are folded for bag filling.



2. BAGS HOLD 12 TO 17 POUNDS. They are made of either Type 41 or 83 Orlon, to resist dye. Dacron bags are used for bleaching runs. Bag is closed with a laundry pin.



3. SCOURING AND DYEING are done in the same paddle machine. If acetate colors are used, goods are scoured before dyeing; when basics are used, goods are scoured after dyeing. Scouring is done with a mild alkali and a detergent for 20 minutes to remove spinning and knitting oils, floor dirt, and fugitive tint. This is followed by a five-minute rinse.

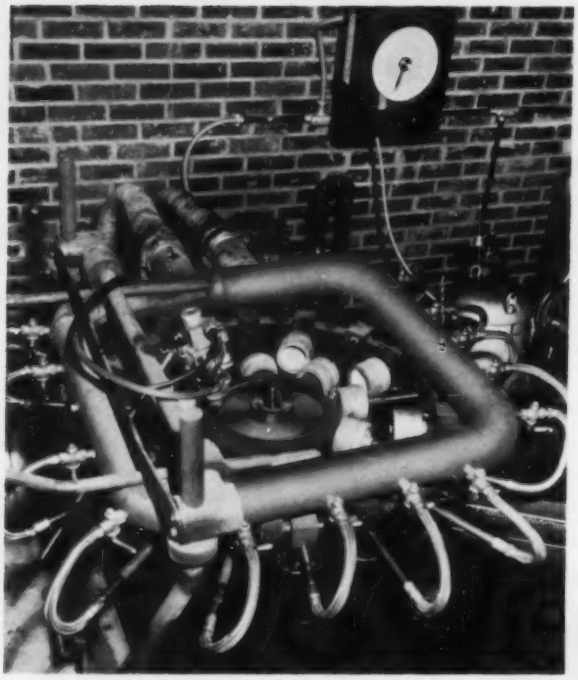
4. SEVEN PADDLE DYEING MACHINES—Smith, Drum and Klauder-Weldon-Giles—are used. They vary in capacity for flexibility, and include 25-, 50-, 100-, 200-, and 375-pound units. Light shades (acetate colors) are dyed for two hours, medium and dark shades (basic colors) for three to five hours. Bath must be cooled slowly to avoid creases.

5. STRIPS ARE EXTRACTED for two minutes following dyeing or scouring.

6. GOODS ARE TUMBLE-DRIED in 15- to 25-pound batches for 20 minutes at 160 F, then cooled for ten minutes with door open.

7. FINISHED STRIPS are hand-folded and examined before shipping.

. . . add YEARS to your GEARS!



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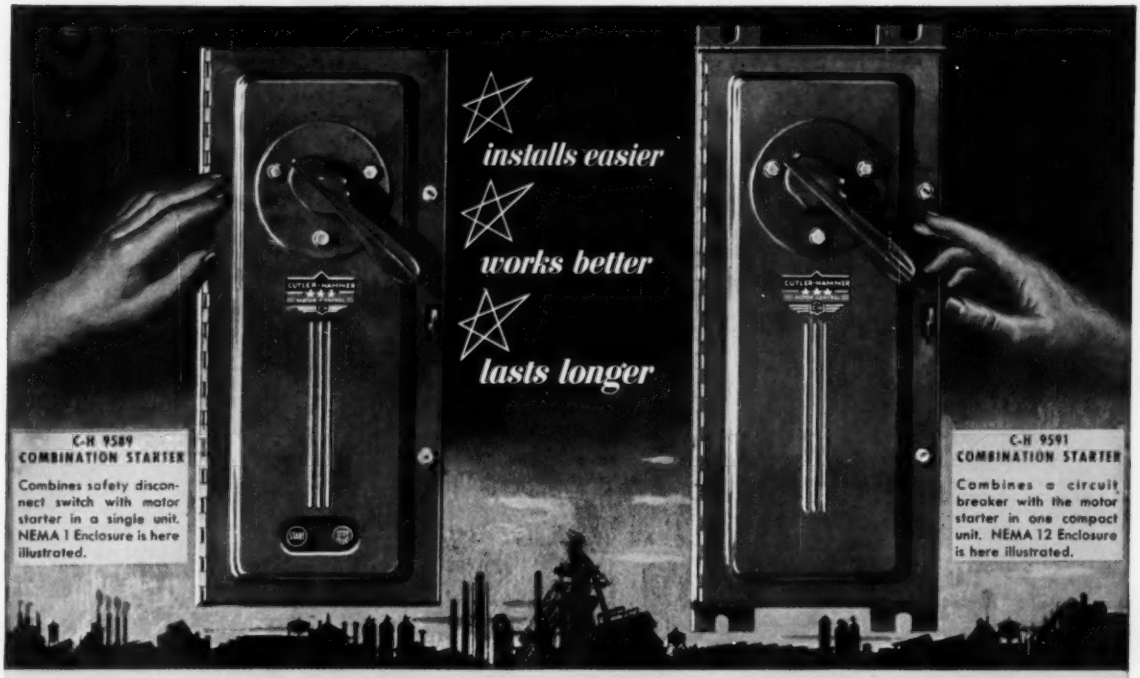
WHAT'S NEW IN MOTOR CONTROL? ★ ★ ★ GET IT FIRST IN CUTLER-HAMMER

New Cutler-Hammer Three-Star Combination Starters offer industry important new economies


installs easier
works better
lasts longer
C-H 9589
COMBINATION STARTER
Combines safety disconnect switch with motor starter in a single unit. NEMA 1 Enclosure is here illustrated.
C-H 9591
COMBINATION STARTER
Combines a circuit breaker with the motor starter in one compact unit. NEMA 12 Enclosure is here illustrated.

Convenience and economy are basic advantages of combination starters. Users everywhere say the new Cutler-Hammer ★ ★ ★ Combination Starters bring these basic advantages to new high levels of importance. Contact life is so amazingly improved that maintenance care is *never* needed in all normal uses. Adjustable load sensing coils permit motors to work at top capacity without hazard to provide maximum production without needless work interruptions. And the widely praised Cutler-Hammer exclusive, full three-phase overload protection in standard combination starters, is optional at slight additional cost.

The three silver stars stand for three new standards

CUTLER-HAMMER
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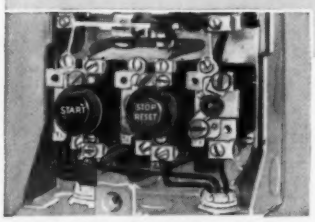
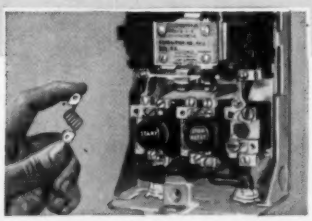
C-H

Compare the performance and economies of these remarkable new Cutler-Hammer Three-Star Combination Starters with any you have ever known. Cutler-Hammer Bulletin 9589 Combination Starters incorporate rugged disconnect switches of advanced design (fused or unfused). Cutler-Hammer Bulletin 9591 Combination Starters are equipped with circuit breakers. Your nearby Cutler-Hammer Authorized Distributor is stocked and ready to serve you. Order from him today.
CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.



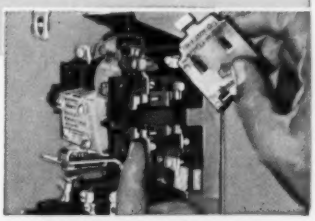
Full Three-Phase Protection

Only *three* overload relays can give complete three-phase protection to avoid motor burn-outs and their costly interruptions to production. And *only* Cutler-Hammer offers this complete three-phase protection in standard combination starters. You pay only for the third relay, nothing extra for special engineering or special enclosures.



Adjustable Load Sensing Coils

The accurate adjustment of overload protection permits motors to work harder without damage to motor windings. This is more important than ever with the newer type small frame motors. Adjustable load sensing coils in these new starters provide 3% loading accuracy instead of the 10% to 12% accuracy in competitive control.



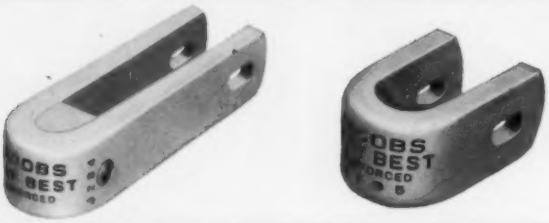
Superlife Vertical Contacts

Experienced control users insist on dust-safe vertical contacts. And now the famous Cutler-Hammer vertical contacts have been doubly improved. First, their new lightweight design cuts bounce to reduce arcing. Second, any arcing that might occur is now pressure-quenched. Compare performance and see the difference.

LUG STRAPS by JACOBS

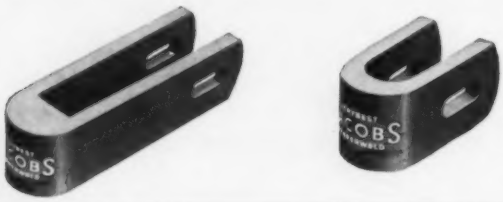
SUPER Reinforced "Verybest"

A new extra-heavy-duty lug strap, even more rugged and durable than the Reinforced "Verybest" lug straps which have been the standard of the industry for over 20 years for long, trouble-free service.



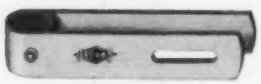
Reinforced "Verybest"

Has built-in reinforcements at sides, slots and heel to give extra wear on modern high-speed looms.



"Verybest" Rubberweld

Molded as one piece with no rivets. Gives absolutely uniform picking action. Resists oils, will not stretch, and not affected by humidity.



Reinforced Roller Cushion and Eclipse Best

For best production results on older or lighter looms.

Wood

Made from finest available Hickory, permanently steam-bent to shape, and secured with heat-treated rivets.

Leather

Crafted from specially selected hairy oak, chrome or apron leather–plied, stitched and folded.

Note: All Jacobs Lugs can be supplied with or without plugs in any size — from stock.

JAKE JACOBS says — "Jacobs Lug Straps will pay off cost-wise for you. They're the Verybest you can buy. Performance proved — ask for samples!"

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NEW EQUIPMENT PARADE

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Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors

New Loom Cleaner May Be Mounted on Beam Handling Crane

The Esco loom cleaner is designed to operate on single line loop systems or mounted on double girder bridge cranes to provide constant coverage over multiple rows of looms. The crane cleaners work on the same runways in combination with beam handling bridges, having built-in limit switches to permit constant operation of the crane cleaners without collision with the handling bridges.

Savings in labor are effected in both cleaning and handling with the combination of the crane cleaners and beam handling bridges. In addition, loom stoppage is greatly reduced and the quality of the cloth is improved by constant cleaning which prevents the accumulation of lint on loom parts.

A feature of this cleaner is the method and means for providing a deflected, high velocity stream of air, with controlled distribution over harnesses, drop wires, etc., of the loom. This is accomplished by means of downwardly directed discharge spouts and adjustable deflectors flared transversely to the looms in a row being cleaned. Oscillating fans are provided for ceiling cleaning. Continuous duty motors are furnished for all blowers, fans, and crane drives. All moving parts have anti-friction bearings.

Esco Div., Engineering Sales Co., 123 W. 29th St., Charlotte, N. C.

Do you want more data? Write ◆ or use card on page 237; list F-101

Delustered Nylon Staple Ideal for Carpet Yarns

Working on the theory that a delustered fiber should reflect less dust than a bright fiber and therefore will result in apparent anti-soilage properties, one manufacturer has developed a delustered form of nylon staple fiber which when utilized in floor coverings provides this advantage.

The new fiber dyes a different tone than the bright, and a rug made from yarns produced from the fiber have a deep, rich-looking color.

Industrial Rayon Corp., 500 Fifth Ave., New York 36, N. Y.

Do you want more data? Write ◆ or use card on page 237; list F-102

Machine Spins Quality Coarse Yarns Directly from Sliver

The Whitin "Monarch" spinning frame is a new type machine for producing very large packages of knotless coarse yarns, from 5s - 8s (cotton count), directly from sliver. The frame features a massive chassis, the Whitin

two-apron roving drafting arrangement with top arm suspension and weighting, 7" gauge, up to 5½" rings, 11" traverse. Either floor or ceiling creels can be used.

It is ideally suited to highly economical production of quality tufted carpet and other coarse yarns from wool, synthetics, and blends with fiber lengths from 3" to 9".

Other features of the frame are: Yarn on bobbin, up to 3.5+lb; draft range, 4 - 50; accommodates sliver up to 100+gr/yd; spindle speeds, 2800 - 5000 rpm; spinning type cradles; Quik-Set ratching for instantaneous change of roll setting; pulleys for four-spindle drive.

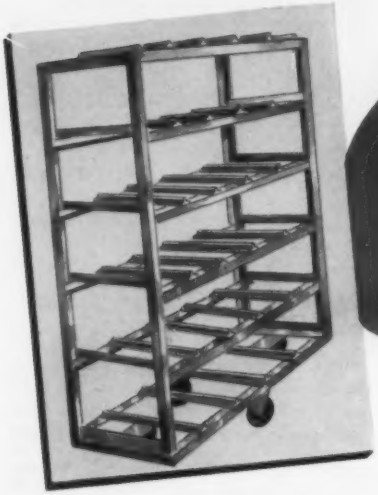
Whitin Machine Works, Whitinsville, Mass.

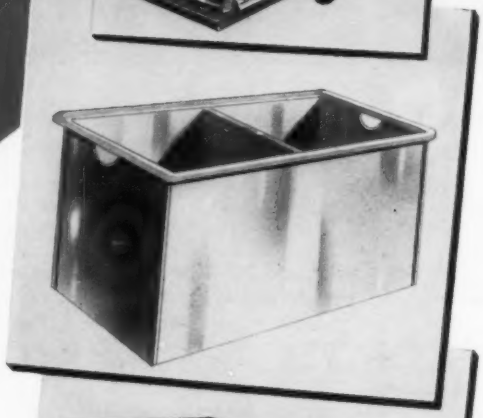
Do you want more data? Write ◆ or use card on page 237; list F-103

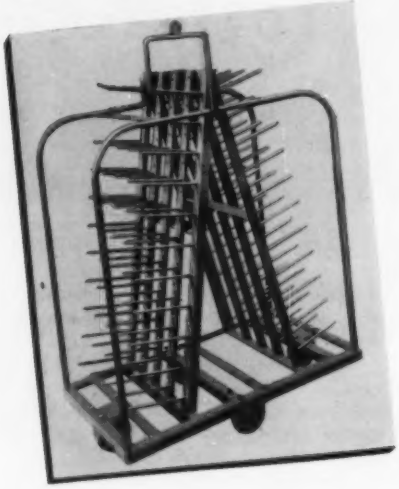
Loops Won't Pull Out of Pile Fabrics Made on Raschel Knitter

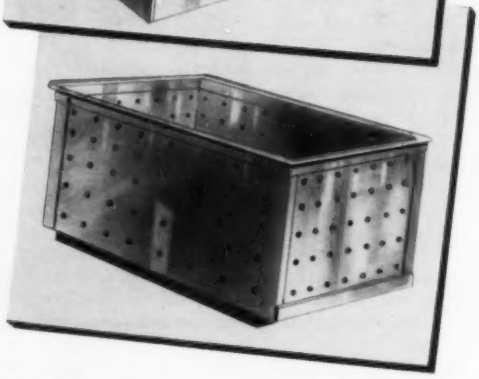
A new type raschel knitting machine is suitable for manufacturing a variety of pile fabrics, including floor coverings, upholstery fabrics, and outerwear fabrics. The basic raschel machine incorporates a patented device to

WHAT DO YOU NEED IN *Materials Handling*









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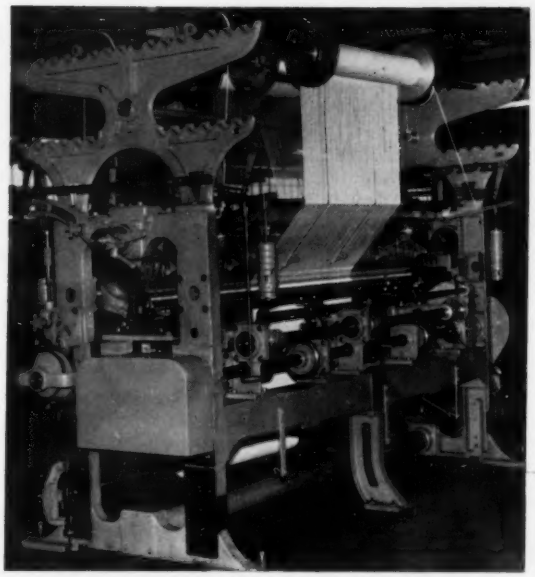


Raschel knitter by Lieberknecht.

produce a pile of various heights and textures.

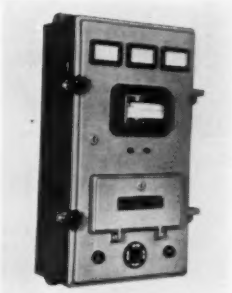
The loop in the fabric will not pull out or run because of the knitting construction employed.

Production on the machine varies, depending upon yarn, gauge, and type of fabric produced. On a 24 gauge machine currently knitting a rayon pile fabric, approximately 25 linear yards per hour are produced.

Karl Lieberknecht, Inc., Reading, Pa.

Do you want more data? Write ◆ or use card on page 237; list F-104

Automatic Moisture Control for Slashers and Dryers



Faster machine speed, greater production, and more efficient steam consumption and power utilization are advantages offered by the "Textometer," a unit which automatically controls the speed of slashers and dryers so that the emerging material always has the desired amount of moisture. Also, the operator is freed for other duties.

The slightest deviation from set moisture per cent is immediately corrected without over-compensation.

Operation of the apparatus, which is manufactured by Mahlo Electro-Mechanical Works of Germany, is based on the close relationship between the moisture content of a given textile and its electrical conductivity. Electrodes, in the form of rollers or feeler units, contact the textile and transfer conductivity readings to the Textometer where the corresponding moisture value is indicated. Readings are not noticeably affected by differences in weight, thread count, or yarn number of the material. Whenever deviation from pre-set moisture content occurs, control signals automatically sent out from the Textometer change machine speed.

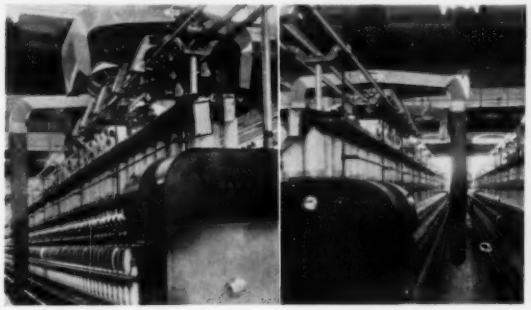
The automatic control unit may be blocked off during shutdown or low speed periods. After re-start, the speed increase can be locked out until overdried material leaves the dryer. The apparatus is also available without the automatic control unit, in which case the operator regulates machine speed by hand. He bases his action on a scale calibrated in moisture %, and on green, red, and yellow signal lamps which indicate respectively "dry," "normal," or "moist" conditions. A recorder can be installed to record drying action over a period of time.

Cosa Corp., 405 Lexington Ave., New York 17, N. Y.

Do you want more data? Write ◆ or use card on page 237; list F-105

Solve Entire Spinning Frame Cleaning Problem with One Automatic Unit

Now available for use with existing or new installations of the American "Tri-Rail Cleaner" over spinning frames is a unit with two long snouts (one on each side of the frame as shown in the accompanying photo) which



delivers strong air currents produced by its turbo type fan to the lower parts of the frames to prevent lint accumulation in this area.

With three components traveling automatically as a unit, this cleaner covers as many as 12 frames, depending on mill conditions, sending controlled currents of air across three separate areas: (1) ceiling areas, (2) roving and creel, and (3) under the frame.

The American MonoRail Co., 13107 Athens Ave., Cleveland 7, Ohio.

Do you want more data? Write ◆ or use card on page 237; list F-106

New Fork-Lift Trucks Reflect Current Automotive Trends

Current automotive trends are reflected in the new Clarklift Line of fork-lift trucks by the inclusion of a 12-volt electrical system, fully automatic transmission, emergency fuel tanks, foam rubber seats, and automobile-like controls as standard equipment.

Exclusive features include self-adjusting brakes, a balanced swing-up hood, solid tire models with drive and steer wheels of the same diameter, combination lift-tilt controls on the steering column, optional radiator screens for dusty

operations, and all-purpose deep-tapered forks.

Newness is accentuated by dramatic but functional styling marked by chrome-plated air scoops framing the driver's seat and a swept-back counterweight, which gives the Clarklift a distinctive streamlined appearance.

Gas models with capacities ranging from 2000 to 5000 lb are included now; electric models and gas models of higher capacity will be added shortly.

"See-through" visibility, lift speeds 50 per cent faster than previous models, and elimination of sway and distortion are results of the new uprights and hydraulic system.

Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich.

Do you want more data? Write ◂ or use card on page 237; list F-107

Cover Keeps Oil Out of Catcher on Seamless Hosiery Machines

The primary purpose of a plastic cover now available for the catcher on the take-down attachment of Scott & Williams hosiery knitting machines is to keep oil from dripping into the catcher; instead, it drains off.

If allowed to continue to drip into the catcher, the oil causes a crazing of the plastic around the opening that the stocking is forced through by air. This crazing will eventually cause picks in the stocking fabric.

Another advantage of this development is that the catcher will accommodate more stockings—holds four or five without any difficulty.

The cover snaps onto the catcher—no screws or fasteners are required.

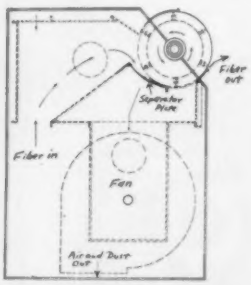
Plastic Industries, Inc., P. O. Box 224, Athens, Tenn.

Do you want more data? Write ◂ or use card on page 237; list F-108

Screenless Condenser Is Self-Cleaning

A new screenless condenser, Model FC-8, has no rotating screen or screen seals to be replaced or to leak good staple into the dust collector or to choke the machine down. A separator plate of perforated metal is set adjacent to the doffer blades and discharge seal plates.

The fibers are drawn into the plate by the self-contained fan (see sketch). As the fibers contact the



separator plate, the doffer (while turning at relatively high speed) wipes the fibers from the separator plate continuously to prevent the flow of air and dust through the perforated plate from being cut off, a condition that would choke the supply line.

Other advantages of the new condenser are: self cleaning—all material passing into the machine is completely discharged; high production capacity—up to 2000 pounds per hour.

Fiber Controls Corporation, Gastonia, N. C.

Do you want more data? Write ◂ or use card on page 237; list F-109

Softener for Resin Baths and Hard-to-Soften Fibers

Wica Softener Apt is a 50 per cent active amphoteric compound especially recommended for use in resin baths and for application to fibers normally difficult to soften.

Even exhaustion allows low usage amounts, and its ease of dispersion is attractive. The product exhibits excellent resistance to yellowing at high temperatures and is compatible with a wide range of finishing materials.

It is resistant to laundering and dry cleaning, and shows excellent resistance to chlorine bleaching treatments. The amphoteric nature of the product allows for compatibility over a wide pH range, thus offering the wet processor a versatile finishing assistant.

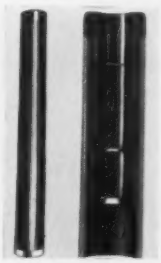
Improved properties of tensile strength, sewability, and durability of softness are provided with its use.

Wica Chemicals, Inc., Old Conrad Rd., Charlotte, N. C.

Do you want more data? Write ◂ or use card on page 237; list F-110

New Bobbin for Gwaltney Frames

A new bobbin for the Saco-Lowell Gwaltney SG-1 spinning frame features a rugged all-plastic tip of sufficient toughness to withstand hardest mill usage and a pressure molded seat insuring permanent precision of fit, concentricity, and alignment, plus ease of doffing.



The thermosetting plastic tip and seat section is fused together with the synthetic tube by the patented "plastiweld" method. The homogeneous composition of the tube, plus impregnation and baking, makes it free from warping, splitting or chipping; heat and friction resistant; unaffected by moisture in any form, whether humid atmosphere or steaming treatment.

American Paper Tube Co., 93 Hoage St., Woonsocket, R. I.

Do you want more data? Write ◂ or use card on page 237; list F-111

U. S. Mills Can Be Licensed to Use Delwin Process for Making Multiple Core Yarns

The multiple core yarn (Delwin) process (TI for Sept. 1955, p. 99) has undergone sufficient research and testing to indicate a wide variety of uses for yarn and fabrics made with this special process.

The Delwin process was developed to combine the best properties of filament and natural fibers while simultaneously eliminating the objectionable features inherent in both. Elimination of fiber slippage, participation in stress by all fibers, and engineered fiber placement are among the advantages that are obtainable.

Up to this point a variety of different synthetic fila-

ments with all natural fibers has been tried. However, it seems that great potentialities can be achieved with these and new combinations in varying methods.

Werner Textile Consultants has recently been appointed exclusive licensing representative in the U. S. for this process by Canadian Patents and Developments, Ltd., agent of the Crown in Canada. Arrangements for sublicensing including technical information and assistance can be made.

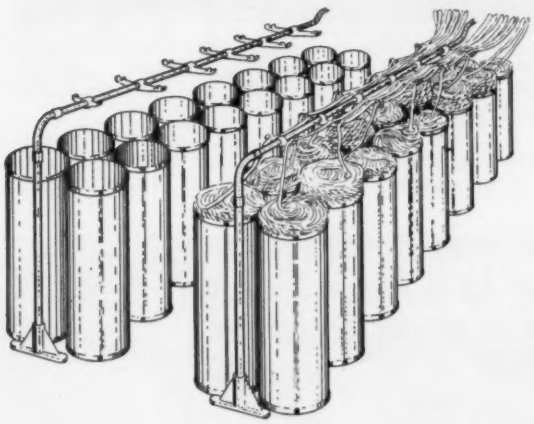
Werner Textile Consultants, 60 East 42nd St., New York 17, N. Y.

Do you want more data? Write ◂ or use card on page 237; list F-112

Extended Drawing Frame Creel

The Saco-Lowell extended creel for drawing frames does away with stretched ends, ends broken as they pull over full cans, increased piecings and waste percentages, and lowered operator efficiency—as well as unwarranted increases in sliver variation.

The creel has several new features. There is only one



groove or slot at each end of each sliver guide. These serve to position the sliver taken from the can located directly below that groove. The slivers already "lifted" ride freely over the inner guides, parallelized and kept from stretching as they pass along together over the non-grooved areas of each succeeding guide on their way to the drafting zone.

The slightly outward-angled position of the horizontal pipes on the creel makes it easier for the frame tender to maneuver between the rows of cans—to piece up, to creel, and to clean from behind. The lint-shedding downward curve of the horizontal pipes at their outer ends is a good housekeeping feature as well as one less maintenance point.

The new creel is simple to install.

Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

Do you want more data? Write ◂ or use card on page 237; list F-113

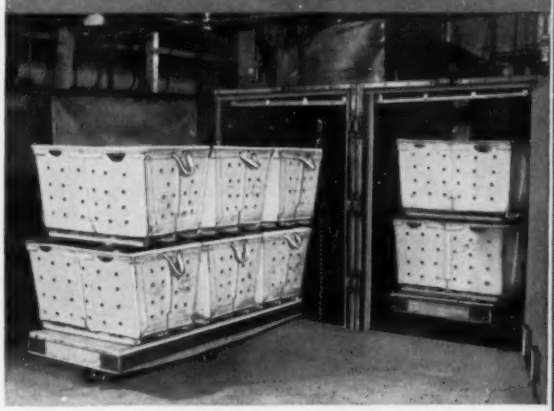
Projection Microscope for Studying Wool Fibers

The Lanameter is a projection microscope designed specifically for the measurement and analysis of wool fibers. Tests performed with this instrument conform to international standards for the measurement of wool fibers.

The apparatus consists of a microscope, a light source,

for the best in CANVAS Steaming and Conditioning Baskets

LOOK FOR **Lane**



Designed especially for yarn conditioning, this economical Lane Style 34 Steaming and Conditioning Basket incorporates *all* these quality features for *long, dependable service at extremely low cost:*

- Special extra heavy Lane duck body for extra long wear.
- Light-weight, extra-strong, rust-resistant spring-steel frame with sturdy, hardwood bottom *double* riveted with non-rusting rivets.
- Rust-proof eyelets on all sides allow thorough efficient conditioning.
- Reinforced, rivet-fastened handles for safe moving.

STANDARD SIZES AVAILABLE

No.	Long	Wide	Deep
1½	18"	14"	12 "
2	22"	14"	14 "
2½	24"	15"	15 "
3	24"	18"	15½"
3½	24"	18"	18 "
4	30"	18"	16 "
4½	30"	18"	18½"
5	30"	18"	20½"
6	30"	20"	20½"
8	34"	22"	23 "
10	36"	24"	25 "
12	36"	26"	27½"

Lane canvas baskets, hampers, and trucks are *built to take it, built to last!* There are other canvas baskets, but there's only *one* Lane. *Always* look for the *Lane* mark—*to be sure!* Call for our representative. He's a specialist in adapting Lane baskets to your material handling problem. Write today.

Canvas Basket Craftsmen Since 1894

Lane

W. T. Lane & Bros., Inc., Poughkeepsie, New York

and a viewing screen, which are combined into a single unit.

It is simple to operate. The specimen is placed on a mechanical stage and brought into focus. The microscopic image appearing on the screen of the instrument is brilliant and well defined.

Magnification ranges from 75x to 500x. For the measurement of fibers, a sliding, rotatable, transparent scale is provided.

William J. Hacker & Co., Inc., 82 Beaver St., New York 5, N. Y.

Do you want more data? Write or use card on page 237; list F-114

Yardage Machine for Making Small Rugs, Spreads, and Bath Sets

The lightweight, yet rugged, Model 100 yardage machine was recently introduced for use in the tufted textile industry to produce small rugs, spreads, bath sets, and garment material.

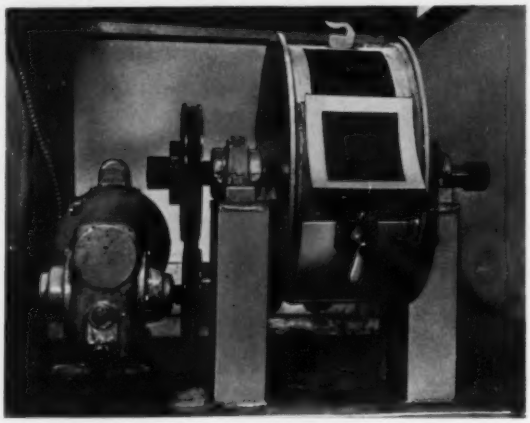
Some of the features of this machine are: Dynamically balanced for vibrationless operation; all gauges to 5/64", cut or loop pile; 30" and 40" widths; 800 to 1350 stitches per minute, depending upon gauge and materials used; anti-friction bearings throughout; splash oil system for efficiency; power yarn feed with variable speed drive; simple adjustable stroke length, using standard precision connecting rods.

Ten-Tex Corp., 1207-09 East 23rd St., Chattanooga, Tenn.

Do you want more data? Write or use card on page 237; list F-115

Evaluate Soil Retardant Finishes with this Apparatus

The Accelerated Soil Tester developed by the Textile Resin Department of the American Cyanamid Company is now being manufactured for sale. This unit provides



a method of soiling the specimens for the evaluation of soil retardant finishes on carpeting and fabrics. The ball mill soiling apparatus rotates at 60 rpm with direction of rotation reversing every two minutes.

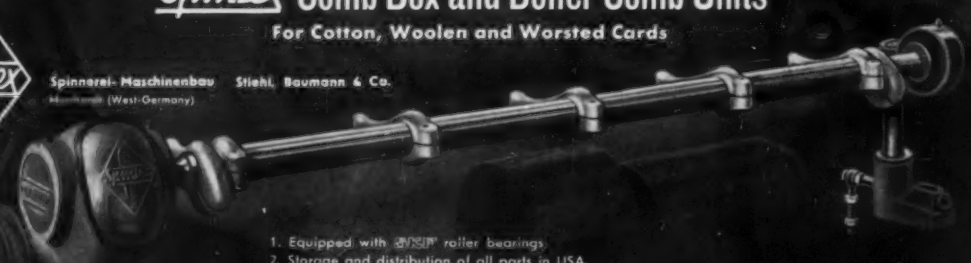
The soil is distributed by placing a weighed amount in a perforated steel capsule along with steel balls. As the ball mill rotates, the soil is uniformly deposited on the

Spintex Comb Box and Doffer Comb Units

For Cotton, Woolen and Worsted Cards

Spinnerei- Maschinenbau Stiehl, Baumann & Co.

(West-Germany)



1. Equipped with "NSK" roller bearings
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3. High-pressure grease lubricated during operation
4. Simple design — rugged construction
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KENTEX APRON

TEXTILE APRON CO., East Point, Ga.

HUGH WILLIAMS & COMPANY, TORONTO, CANADA—CANADIAN REPRESENTATIVE

PINS and LAGS

Special pins and pin arrangements produced for processing wool, cotton, synthetics, jute, sisal, flax, mill waste and shoddy.

B Co.

Volume production by precision methods permits attractive prices on all types. Prompt deliveries. W. H. Bagshaw Co., Inc. (Est. 1870) 62 Pine St., Nashua, N. H.

by BAGSHAW

fabric samples. The ball mill is equipped to hold four samples of carpeting or fabric, each sample size 5" x 5"

After the samples have been soiled, they are removed, vacuumed, and the soiling is determined by a reflectance meter.

Tests with the Accelerated Soil Tester have been correlated with actual floor tests by Cyanamid's Textile Resin Department.

Custom Scientific Instruments, Inc., Kearny, N. J.

Do you want more data? Write ◆ or use card on page 237; list F-116

Speed Spinning Frame Creeling with this Bobbin Hanger

The Hartford top hanger for overhead creels features a positive latch that makes performance of the creeling operation easier and faster. Built with a sturdy, cast iron body similar in design to the Hartford split-base spindles, the hanger can be maintained for less and this saving is reflected in its price to the textile mills.

A bobbin of roving is very easily slipped into place, and this trips the latch to send from inside the hanger a pair of ears to give the bobbin positive support. When the bobbin is empty, another slight lift unlatches the ears, which snap back inside the hanger to release the bobbin. Motions and effort are at a minimum.

The anti-friction suspension of this bobbin hanger is of free-running ball construction. Bobbins turn with complete freedom so that the roving is protected from undue strain and spinning can be uniform. Where required, a brake is available.

The open creel construction provided when these hangers are installed simplifies cleaning and makes blowers more effective.

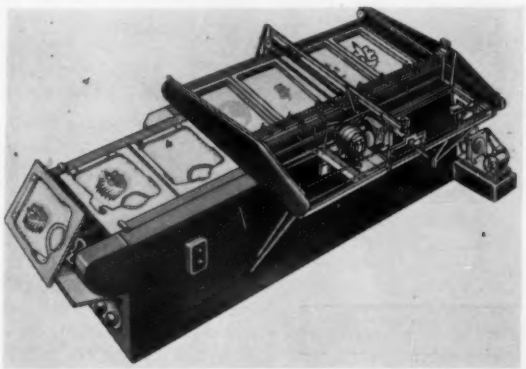
All parts are either inherently impervious to rust or are cadmium plated for protection.

Hartford Machine Screw Co., Hartford 2, Conn.

Do you want more data? Write ◆ or use card on page 237; list F-117

Machine Automatically Silk Screens Textiles with up to Six Colors

Designs with as many as six colors may be automatically reproduced by the silk screen printing process on textiles and paper products at a high rate of production

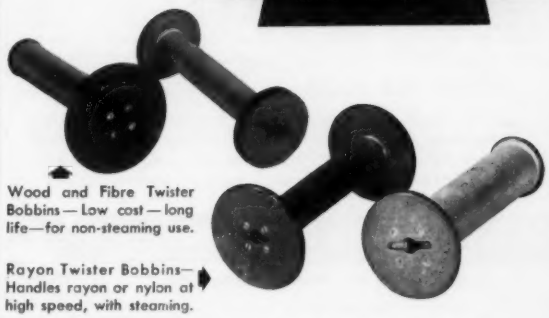


with the "Automated" Multi-Screen Press which was recently announced.

The standard four-color equipment (#1218-4) produces in one minute 20 one-color, 12 two-color, 6 three-color, or

Lestershire Bobbins by NATIONAL

first choice of economy-wise mill men



Wood and Fibre Twister Bobbins — Low cost — long life — for non-steaming use.

Rayon Twister Bobbins — Handles rayon or nylon at high speed, with steaming.

What's your production headache—newly discovered synthetic yarns, larger "packages," higher rotating speeds? You'll find a remedy in Lestershire Bobbins by National.

Lestershire Division of National aims its research, design and fabricating skills pointblank at your specific bobbin trouble. Bobbin improvement is a fulltime job with National—the Lestershire line has grown with the industry's requirements. So you're sure of getting just the bobbins you need —to suit almost any spindle, speed or yarn in use today.

You'll get real economy too. Lestershire bobbins and spindles are realistically priced. Prompt service from nearby supply houses means additional savings. And Lestershire's rigid quality control assures long, trouble-free bobbin and spindle life.

Get in touch with your nearest National Office or representative—or write us at Wilmington, Delaware. Southern Bobbin Representatives: Odell Mill Supply Co., Greensboro, N. C.; Greenville Textile Supply Co., Greenville, S. C.

NATIONAL VULCANIZED FIBRE CO.

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Johnson Joint with SYPHON ELBOW
3000 Series
ASSEMBLY PLATE — Holds internal parts in position when head is removed.
SELF-SUPPORTING — Needs no external supports of any kind.
SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

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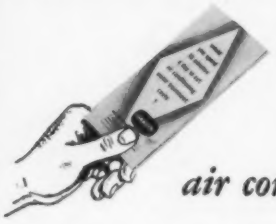
on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

815 Wood St., Three Rivers, Mich.

NEW FOLDER DESCRIBES OAKITE 10-MINUTE TREATMENT



for eliminating water troubles from air conditioning systems

First, charge air conditioning system water with Oakite Airefiner No. 52 as directed. Test the water with Oakite Indicator supplied without cost. Add Airefiner No. 52. Drain system at recommended intervals.

The results? No more slime or scale in system. No more downtime for descaling. No more high servicing cost. **FREE** illustrated Folder F9736 gives details. Contact your nearby Oakite man for your copy or write Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

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6 four-color jobs. (These are minimum figures. Finished work can be produced as fast as the machine can be fed.) The entire production operation can be handled by just two people.

Operating on a conveyor principle, the machine permits material to be screened in one or more colors in a continuous operation.

An automatic stop motion can be set to permit the movement of the carrier platforms in single or multiple order over the color screens. This stop action also insures hairline registration.

The printing of cloth is made practicable when the automatic stop motion is set for single order movement. Automatic two-way squeegee action, which can be adjusted to "light or heavy" pressure according to job requirements, works in conjunction with the platform movement order.

By using the conveyor system, additional work units can be placed upon the conveyor to receive the first color. When all the platforms have passed through the color screen and dried, every fourth unit will be a finished one and can be removed and replaced by a new work unit for the first color printing. The machine is so constructed as to permit changes in the number of work units and printing screens as may best suit the type of job.

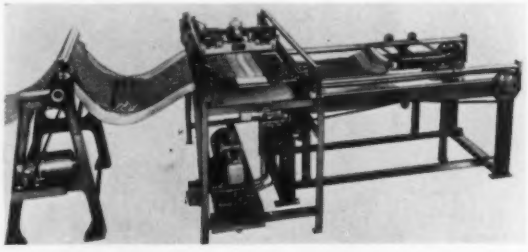
A built-in infrared drying oven dries textiles and paper products in seconds, eliminating the time consuming racking process.

American Automation, Inc., 175 W. Jackson Blvd., Chicago 4, Ill.

Do you want more data? Write ☁ or use card on page 237; list F-118

Machine Automatically Cuts Textiles on Line or Thread

A new cutting machine for textiles will automatically follow a cutting line or thread and will also cut between woven or printed patterns. It is adaptable to handkerchiefs, towels, napkins, tablecloths, etc.—in fact, any material with woven or printed patterns where the difference in light penetration between the background and



the pattern is 10% or more. Production ranges from 15 to 40 articles per minute, depending on the length and width. No operator is required except to bring material to the machine and remove the stack of cut articles.

Phototubes guide the rotary knife across the material to be cut, following a line in the material. When this line is irregular, the knife moves along the same path, thus making the cut exactly where necessary even when there are bends or curves in the cutting line. The same is true in cutting between patterns where there is no cutting line in the material. In this case, the knife follows a line halfway between the patterns.

The operation of the machine is intermittent. As soon as the material is pulled forward by automatic fingers, phototubes center the rotary knife on the cutting line. As the knife proceeds across the material, the electric eyes

move with it and, by energizing magnetic clutches, maintain the knife exactly on the cutting line until the cut is completed.

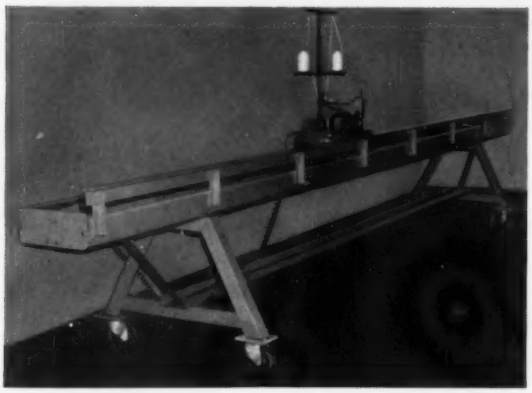
As the rotary knife is returning to its original position it is lifted up, and during its return the fingers are pulling the next article forward under the knife. When the knife returns to its original position, electric eyes center it again on the cutting line and the next cut is started. Meanwhile, the cut articles are stacked neatly one upon the other.

Sjostrom Machine Co., Boca Raton, Fla.

Do you want more data? Write ◂ or use card on page 237; list F-119

Railway Sewing Machine for Carpets

Designed specifically for the carpet industry is a new railway sewing machine which is equipped with a Union Special 80200 sewing head, a ½ hp positive rack and



pinion drive, full length heavy pin rail, and rubber-tired ball bearing carriage wheels.

The machine starts sewing when a pushbutton is pressed, and stops automatically when a preset seam length has been sewn. Widespread legs prevent the unit from being tipped over, and it is easily portable.

Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

Do you want more data? Write ◂ or use card on page 237; list F-120

Standards for Estimating Neps in Card Web

A method for quickly estimating the number of neps in a card web has been developed at the Swedish Institute for Textile Research.

A sample is removed from the card web by means of a special sampling plate consisting of two sheets of Perspex. This sample is compared with a set of photographs of webs, having different numbers of neps. Each set consists of five photographs having grade numbers of 1, 3, 5, 7 and 9. Hence a sample can easily be classified to grade numbers from 0 to 10.

By using this method, different operators get consistent results, and one operator can classify 200 samples in one hour.

It has been found by experiments that the grade number of neps in the web gives a good basis for predicting the appearance of the spun yarn. The difference of one nep grade in a blend of average quality will correspond to a difference of about ¼ grade in yarn appearance, de-

AMERICAN

PRESSED-STEEL HAND TRUCKS

Light weight... of die-formed pressed-steel—as light or lighter than steel-reinforced wood trucks... reduced truck weight means more pay-load!

Maneuverable... wheels located inside or outside the frame for shortest practical turning radius—they're ALL built to move goods easily in narrow aisles, small spaces, tight corners.

Balanced... finger-tip balance is built into every American truck. American Steelite® Wheels with rubber tread, oversize ball bearings to move heavy loads with greatest ease.

Sturdy... practically indestructible, many of our customers tell us, year after year. Cold-rolled steel axles and pressed-steel side rails and cross bars make American First... in sturdiness.

Efficient... is the word for American Hand Trucks. No matter what type of goods you have to move, it's likely American has a bright-red model built just for the job. Over 40 sizes and models stocked by 400 distributors from coast to coast—and every truck guaranteed for 5 years.

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R. V. BORDEN, W. H. ROSE—Greenville, S. C.—Box 1048 Phone 3-0913
O. B. LAND—Athens, Ga.—Box 1187—Liberty 6-1647
L. H. MELLOR, JR.—Mid-Atlantic States—123 Treaty Rd.—Drexel Hill, Pa.—Phone Hillton 9-1563
H. R. FISHER—Concord, N. C.—Box 83—Phone 2-8830
H. J. SMITH—Providence—Box 1187—Gaspee 1-0100

termined by ASTM standards.

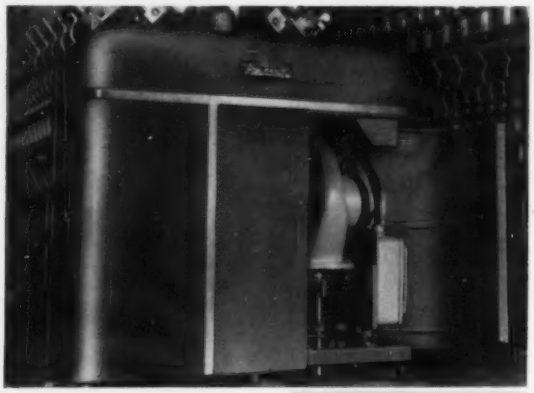
The grade numbers obtained can be corrected for weight by weighing the samples and adjusted to standard sample weight. This is of value when comparing the results obtained in different mills, having different sliver weights.

Swedish Institute for Textile Research, Gothenburg, Sweden.

Do you want more data? Write ◂ or use card on page 237; list F-121

Uniform Suction at Each Spindle One Feature of this Pneumatic End Collector

A pneumatic clearer system for spinning frames, which has been used for several years in Japan, has recently been introduced into the United States. Called Pneumaniez, it is manufactured by the Nippon Spindle Mfg. Co.



Collection tube is pear-shaped and tapered.

A unique feature of the system is the design of the collection tube which has the following advantages:

(1) Pear-shaped (or tear-drop-shaped) cross section for maximum suction at orifice;

(2) Tapered to give equal suction at each spindle;

(3) Held in place by springs—very simple to disassemble for cleaning, space between front fluted roll and collection tube easily adjustable, rubber hose connections to each tube for simple removal and flexibility;

(4) Hard-rubber ends easily removed for cleaning—molded with internal tapered surface to eliminate eddy currents.

The system is built for either central collection or by individual frames. The collection box for the individual frame type collection is compact, with a single unit motor and fan which requires no lubrication. The boxes are also built with extra storage compartments for roving and sliver waste.

Edward S. Rudnick, Olympia Bldg., New Bedford, Mass.

Do you want more data? Write ◂ or use card on page 237; list F-122

New Wet Process Aids

A highly effective dispersing agent for many types of dyestuffs, Dispersinol C, is anionic in nature and gives a pH of 5.8 to 6.0 in water. In addition to its outstanding dispersing properties, it also has excellent leveling and retarding action for many types of dyes and is particularly recommended for use in union dyeings involving a

combination of synthetic and natural fibers, such as Dacron-wool blends.

A new assistant for use in Textone (sodium chlorite) bleaching, called Arko Buffer N, is a soft white paste which gives a pH of 8± in water. Its primary functions are: (1) to control the liberation of chlorine dioxide in the bleaching operation, thus minimizing the highly objectionable odor characteristic of the Textone bleaching process; (2) to inhibit the corrosion of stainless steel and monel metal equipment used in this process.

Arkansas Co., Inc., P. O. Box 210, Newark 1, N. J.

Do you want more data? Write ◆ or use card on page 237; list F-123

High-Bulk Dynel Fiber Gives Knitwear More Sales Appeal

A new controlled-high-shrinkage dynel staple fiber, designated Dynel 63, is available for use, in blends with cotton, to produce bulking yarns. Goods knit from these bulking yarns give a better hand, more counter appeal, better serviceability, and more "warmth with less weight" than dynel-cotton blends offered heretofore.

A more even and attractive cover than on regular cotton-and-dynel blends, a soft hand, and excellent stability in size and shape after 50 or more launderings are provided by garments made from the new high-bulk fiber blends.

The high bulking power of the new dynel fiber is attributed to its fiber shrinkage of 25%, which is taken up in boiling water or a boiling dyebath to produce a staple fabric.

In making fabrics for cotton-and-dynel sleepers, for example, a proportion by weight of 2 to 3 parts of combed cotton sliver is blended with 1 to 2 parts of dynel sliver in the drawing operation, and the blend is spun into yarn. The yarn is knit very loosely, and the fabric is piece dyed for color. This dyeing simultaneously produces bulking.

Textile Fibers Department, Carbide and Carbon Chemicals Co., 30 E. 42nd St., New York 17, N. Y.

Do you want more data? Write ◆ or use card on page 237; list F-124

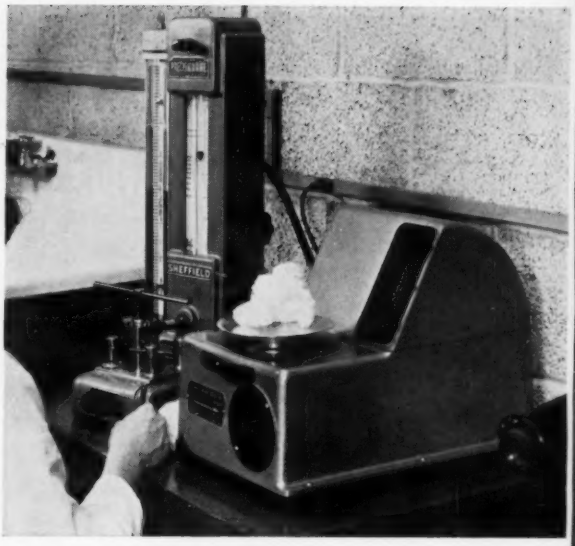
Versatile Twister Features Unit Construction

The new Platt Bros. M.D.1 Light Ring Doubler incorporates many features which provide a high quality product with an increased production efficiency. The flexibility of the machine is such that yarns ranging from 8s/2 to 160s/2 can be processed on both wet and dry systems. Lifts are available from 6" to 12" with ring diameters up to 3¼" in gauges up to 4¾". Width of frame is 2' 8".

Built on unit construction principles with a standard head end and off end and a series of standard framing units, the machine can be shipped from the manufacturer's plant in a number of sections, each being in an almost complete state of assembly and requiring little more than coupling together. This results in a considerable reduction in erection time in the mill. A unified driving mechanism and transmission with positive coupling points further facilitate assembly.

Some of the mechanical features of this twister are:

1. The twist and lifter speeds may be changed simply by rotating a handle; another handle reverses direction of rotation of spindles and delivery rolls—no gear changing



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SHADOGRAPH SCALE

assures accuracy in MICRONAIRE test

This scale is precision designed for weighing samples in conjunction with the Sheffield Micronaire testing machine. Extreme accuracy, plus greater speed and easy-to-read shado-edge indication has made it the choice of cotton shippers, brokers and mills both here and abroad. Indication by a shadow line is projected on an illuminated dial. You avoid the possibility of parallax readings. Friction of indicating mechanism is eliminated. Short lever fall together with hydraulic damping action assures an always fast and accurate weight measurement. Dial is graduated with 1" of indicator travel equal to 15 grains, over and under. Scale does not require leveling—can be used in any location.

SHADOGRAPH
MODEL 4104-A

Write for descriptive folder.

Exact Weight scales also available for color control, slashing, sliver test, yarn count, quality control, denier testing and check weighing. Sales and service coast to coast.

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Better quality control
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Can be easily installed on any machine, old or new, and then pays for itself through improved production, more operating profit. **Low** in cost, **high** in efficiency. Send us specifications of your machine for full information and our proposal.

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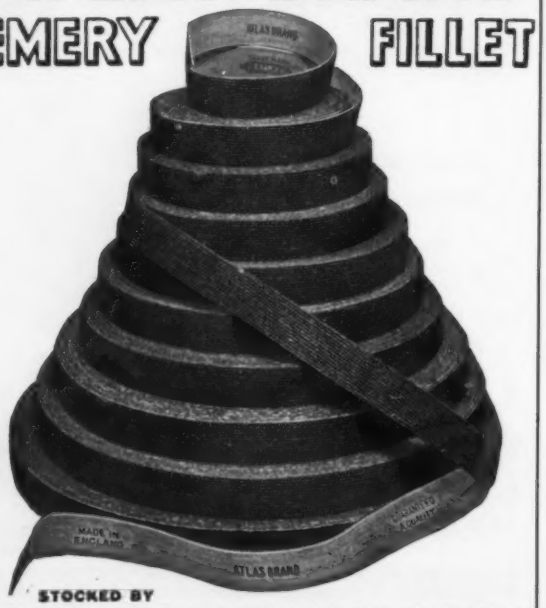
ATLAS BRAND
EMERY FILLET



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THE PRINCIPAL MILL SUPPLY HOUSES
AND CARD MAKERS

required, with exception of pulley on main drive to vary spindle speed.

2. Each spindle is individually driven by pulley on main drive shaft through long-life endless tapes having an arc of contact around the spindle whorl and driving pulley of approximately 180 degrees.

3. Yarn delivery in inches per minute is indicated on large dial tachometer mounted adjacent to the twist regulator on head end. Thus turns per inch being inserted in yarn can be readily obtained by dividing spindle speed by reading on tachometer.

4. Electro-magnetic building unit, driven from the output shaft of the variable speed unit, provides a highly efficient ring rail traverse which combines smooth action with a quick reversal. This eliminates sloughing at the ends of the bobbins and gives a well-built package that improves the efficiency of subsequent processes. Build is controlled by a template mechanism, the profile of the two templates determining the finished shape of the package.

Atkinson, Haserick & Co., 211 Congress St., Boston 6, Mass.

Do you want more data? Write ◂ or use card on page 237; list F-125

Equipment Briefs

Better Round Knife Cutting Machine. Major improvements incorporated in the new "Lightning" series of Eastman round knife cutting machines are: (1) permanently lubricated motor bearings; (2) a metal cap called the "lint lock" which seals the gears against lint, threads, and dust; (3) a fully enclosed housing around the automatic starter which protects the mechanism against dirt, lint, and grease; and (4) a new "forward sweep" plow that keeps threads and loosely woven materials from getting behind the knife—this device also makes easier the first cut into the lay and prevents ragged edges.

Eastman Machine Co., 779 Washington St., Buffalo 8, N. Y.

Do you want more data? Write supplier or use card on page 237; list F-201

High-Lift Platform Hand Truck. A lifting height of 51½" through 70½" and quick accessibility for maintenance are features of a new 4000-lb capacity, battery-powered hand truck available in two models. Named the "Hi-Lift Platform," the truck travels at 3 mph empty and 2.2 mph fully loaded, in both forward and reverse. Full-load lifting speed is 9 fpm and lowering speed is 20 fpm.

Clark Equipment Co., Industrial Truck Div., Battle Creek, Mich.

Do you want more data? Write supplier or use card on page 237; list F-202

New Vise Lacer for Small Hooks. Designed expressly for belt hooks used to lace belts from .060" to .156" thick is the new No. 1 - 6" vise lacer which can be used in any standard vise 4" or larger. Hook retainer has 50 slots to accommodate the standard 50-hook card of the No. 1, 1-A, and 1-D hooks. Eliminates need for special hook adapter previously required for regular belt lacers.

Clipper Belt Lacer Co., Grand Rapids, Mich.

Do you want more data? Write supplier or use card on page 237; list F-203

Industrial Tires Rebuilt. When the tires wear out on metal wheels from hand trucks, dollies, power lift trucks, and other industrial equipment, they can be replaced by an exclusive rubber-to-metal bonding process and thus save time and money. Old wheels are first given a rigid inspection and any that are cracked, chipped, or broken are destroyed. Next, the old rubber is completely removed and metal is sandblasted in preparation for securely bonding the new rubber tire to the wheel.

Gordy Tire Co., 151 14th St., Atlanta 2, Ga.

Do you want more data? Write supplier or use card on page 237; list F-204

Wet-Dry Type Vacuum Cleaner. The Clark Model WD-6 heavy duty, portable, wet-dry type vacuum cleaner offers compactness coupled with powerful suction. Provides a water lift of 63 inches with closed orifice. Dry capacity is ½ bushel; wet, 2½ gal. Device warns operator when capacity has been reached in wet pick-up work.

Clarke Sanding Machine Co., 30 E. Clay Ave., Muskegon, Mich.

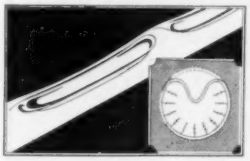
Do you want more data? Write supplier or use card on page 237; list F-205

Spray Valve Eliminates Sticking. A new non-scaling spray valve with valve stem and guide sealed against liquid to prevent scaling is designed for applications such as feedwater heaters, deaerators, hot process water softeners, cooling towers, etc. Available in 1" to 1½" sizes constructed of bronze or stainless with approximate pressure drops from 4 to 5 psig at maximum flow. Elastic seal withstands temperatures up to 450 F.

Griggs Machine Co., Inc., Wallington, N. J.

Do you want more data? Write supplier or use card on page 237; list F-206

Fluorescent Lamp Gives Twice the Light. Recently developed was a new fluorescent lamp with double the light output of present tubes of equal length—a result of change in tube design. It features a series of lengthwise dents or grooves along one side of the 8 ft long fluorescent tube. At the grooves, the new tube, called the "Power-Groove," is nearly U-shaped in cross section. To be used



in new installations and not for replacements in existing fixtures, the tube is 2⅛" in diameter and rated at about 200 watts. An adequate supply is expected late this year for lighting installations in 1957.

General Electric Co., Nela Park, Cleveland 12, Ohio.

Do you want more data? Write supplier or use card on page 237; list F-207

Automatic "Tap-Touch" Carton Stapling. The average carton can be closed for less than one-half cent with the new Model C S H-2 automatic stapling machine which fastens flaps with an automatic tap and staples at a touch. Operation is entirely mechanical—no electrical connections required.

Container Stapling Corp., P. O. Box 247, Herrin, Ill.

Do you want more data? Write supplier or use card on page 237; list F-208

Coating for Safety Belt Fabric. High abrasion resistance

Sales doubled in '55

THERE MUST BE A REASON—and there is!

ECLIPSE BOBBIN HOLDERS

ARE THE WORLD'S FINEST

It's no exaggeration. Sales of Eclipse Bobbin Holders really skyrocketed in '55, and they're continuing to rise with every passing month. There is, of course, good reason for this gratifying sales increase. The textile industry has discovered that this bobbin holder—providing light, controlled tension which diminishes with the size of the package—drastically reduces breakbacks. This cuts maintenance requirements with resultant savings in labor costs. There is really no excuse for using old-fashioned, inefficient wooden skewers today. The modern way to spin cloth is with durable, economical Eclipse Bobbin Holders. And our increased plant capacity now assures you of prompt delivery. Better place your order today.

PROMPT DELIVERY

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Bendix AVIATION CORPORATION

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THE SEAMLESS FLEXIBLE ALL-METAL HOSE

SEAMLEX Hose Ensures Uninterrupted Production

. . . because SEAMLEX is made of extra large, GENUINE SEAMLESS bronze tubing, helically corrugated by the exclusive SEAMLEX ROLL-IN PROCESS. Sturdily constructed throughout . . . Rugged reinforced end connections for added safety.

Largest range of stock sizes in bronze hose: 1/16" I.D. to 8" I.D. inclusive; most sizes also available in steel, stainless steel, monel and aluminum.

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We build dye-vats, kiers, starch-kettles, acid tanks, jib-boxes and other processing vessels for the finishing and dyeing industry—in stainless steel, nickel-clad steel, or of standard steel lined with Monel metal.

Our long experience in the design and fabrication of elevated tanks and vessels for the textile industry may be of help to you. Write for latest Cole catalog—*Tank Talk*.

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- CYLINDERS
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and flexibility are imparted to webbing materials for use in automobile and airplane seat belts when they are coated with a new organosol formulation based on Pliovic A0. Good adhesion to the coating assures longer life for the fabric by protecting it against raveling and fraying. Coating also helps assure a lasting texture and colorful appearance in the fabric.

Chemical Div., Goodyear Tire & Rubber Co., Akron, Ohio.

Do you want more data? Write supplier or use card on page 237; list F-209

Eliminate Noise from Water Lines. "Soundzorber," a wire-reinforced rubber pipe for eliminating noise and vibration from water lines, is available in sizes ranging from ½" to 12" ID. Pressure range is up to 250 psi and temperature ranges to 180 F for cold water, brine, and hot water lines.

T. R. Finn & Co., Inc., Industrial Div., 200 Central Ave., Hawthorne, N. J.

Do you want more data? Write supplier or use card on page 237; list F-210

Handy Thickness Gauge. A hand-held thickness gauge, which operates on a magnetic principle and requires no power, is designed for quick, accurate, non-destructive measurement of the thickness of non-magnetic materials bonded to smooth iron or steel and those which can be placed over a magnetic reference plate. Measures paint coatings, platings, and sheet materials such as plastics, paper, etc.

Instrument Dept., General Electric Co., Lynn, Mass.

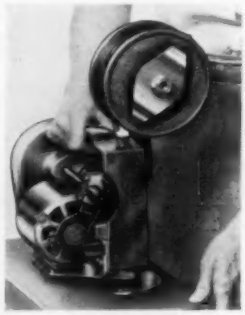
Do you want more data? Write supplier or use card on page 237; list F-211

Circulating Lubrication System. For lubrication of textile mill machinery requiring continuous recirculation of filtered oil to bearing surfaces is the line of CS circulating lubrication systems. Furnished complete, the systems consist of liquid pump, tank, filter, heat exchanger control valve, and required piping. Easy to install, they prevent oil breakdown.

Bowser Technical Refrigeration, Terryville, Conn.

Do you want more data? Write supplier or use card on page 237; list F-212

Portable Wire Stitcher for Cartons. Need for lifting or carrying cartons to a stationary top sealer is eliminated with a new, portable wire stitcher which weighs only 15 lb. Standard 5-lb spool of wire attached is utilized by the machine to form stitches at a very low cost. Makes about 200 stitches per minute on either single or double fluted board, as well as on fiber, wood, or leather.



Ordnance Gauge Co., Philadelphia 25, Pa.

Do you want more data? Write supplier or use card on page 237; list F-213

Device Controls Conductivity of Solutions. A new electronic instrument for controlling the conductivity of solutions is applicable to textile manufacturing operations such as water treatment and process baths. Designed for simplified use and operation, the controller is equipped with two-zone action for both alarm and control.

Fielden Instrument Div., Robertshaw-Fulton Controls Co., 2920 N. Fourth St., Philadelphia 33, Pa.

Do you want more data? Write supplier or use card on page 237; list F-214

Rust Preventive Spray. For use on tools, molds, dies,

instruments, nested metal parts, and machinery is a rust preventive spray called "Rust Chek." Packaged in a 12-oz aerosol spray container, it forms a clear, dry, waxy film .0005" thick. One can covers approximately 80 sq ft. Except in case of use on precision instruments where critical tolerances are to be held, film need not be removed when protected machinery, etc., is taken from storage—film is worked off in using. Does not absorb dust and dirt.

Eastern Aerosol Products, Newfoundland, N. J.

Do you want more data? Write supplier or use card on page 237; list F-215

One Man Palletizes Heavy Drums with this Cart. A drum and barrel truck now available makes it possible for one operator to easily place heavy drums on pallets. Called the "Ezy-Rol Barrel Cart," it allows the truck's shoes to be placed on edge of the pallet so that in one forward motion the drum can be elevated to the pallet with a minimum of operator effort. Also, drums can be safely lowered from pallets with the cart. Spring-operated chime automatically drops over barrel edge as truck is moved against barrel.

Valley Craft Products, Inc., Lake City, Minn.

Do you want more data? Write supplier or use card on page 237; list F-216

Safety Device for Conveyor Systems. A new automatic safety controller provides warning and prevents damage from abnormal load conditions of any kind on electrically driven conveyor systems. Called the Tipp-Tronic, the electro-mechanical device eliminates need for shear pins, slip clutches, and other mechanical safety devices used on conveyors where they and/or adjacent equipment may be damaged by accidental jam-ups. Unit also affords protection against extreme overload and need for lubrication which results in minimum line pull to keep within its ultimate rating.

Tipp Mfg. Co., Tipp City, Ohio.

Do you want more data? Write supplier or use card on page 237; list F-217

Reduce Absenteeism with Vitamins. Multi-vitamin capsules are available in bulk quantities for on-the-job distribution to employees as a management service in the interests of the operatives' good health as well as to reduce absenteeism. A supplement to necessary vitamins in the daily diet, they help to keep employees fit and capable of resisting colds, minor ailments, and fatigue. Recommended daily dosage, one capsule.

East Vitamin Products, 1462 E. Main St., Rochester 9, N. Y.

Do you want more data? Write supplier or use card on page 237; list F-218

Assure Even Flow of Dry Materials from Bins, Hoppers. No rectifier is required for a new type electro-permanent magnetic vibrator which operates at 3600 vibrations per minute and transmits a rythmic action to bins, hoppers, or chutes handling dry materials in lump or powdered form, assuring a free and dependable even flow at all times. Called the Eriez Hi-Vi unit vibrator, the completely enclosed unit, which operates on ordinary a-c current, sets up a rapid "double-diaphragming" or kneading action in the bin wall that in effect expands the lower half of the bin while compressing the upper half. Thus stick-

Are you looking for

smoothness

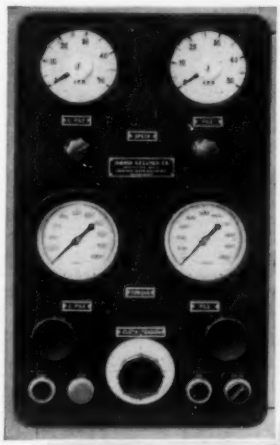
when you nap

COTTONS?

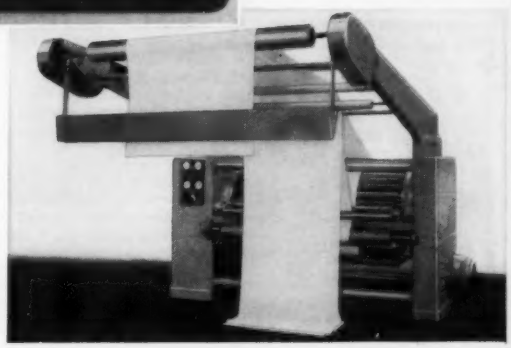
Smoothness of nap is second nature to a Gessner Hi-Torc Napper. A joining of power and speed gives the Hi-Torc Napper *MAXIMUM RAISING ACTION* from the very first run. In an amazingly short time, the pile and counterpile produce the perfect smoothness you want to obtain — without slip filling or unduly weakening the fabric.

You can accomplish every step of napping on a single Hi-Torc Napper—breaking, raising, smoothing and finishing, including felting if you so desire. You reduce dead loss, you retain strength and improve the quality of the fabric, all at a production rate several times that of usual napping. Whatever napping result you determine, may be duplicated over and over, solely from the control panel.

Hi-Torc is making napping history in cotton mills right now. May we tell you where?



Gessner-Hi-Torc Napper and central control panel.



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Gessner takes the guesswork out of napping

Got a Cap Problem ?

Stretch yarn **Lively yarns**
Bulked yarn **ANY yarns**

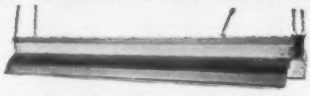
For cones, tubes, pirns, bobbins—ANY package
Let us help you solve it.

New England Representative: J. H. Windle, Jr.,
231 S. Main Street, Providence, R. I.

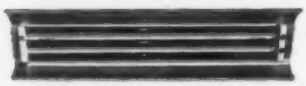
ENGINEERED *Plastics*
INCORPORATED
Gibsonville, North Carolina

Check potential dye streaks at the SOURCE

with the new IDENTA-LITE*



Special high-intensity reflector finish



3—48" ultra-violet lamps

Immaturity
Cat-eye Cotton
California Cotton
Fibre Contamination
Oil Spots

Cotton Fibre

Cloth Inspection

Hosiery Inspection

Excellent for dyestuff and chemical identification and adulteration

The powerful ultra-violet rays of the Identa-Lite instantly show up almost all of the potential causes of dye streaks . . . from the bale to cloth inspection. Various defects produce characteristic reactions under this light, thus making it easy to correct each at its source.

For Instance: Each oil used in opening, carding, spinning, weaving, and finishing can be typed and matched with oil spots on finished goods, thus making it possible to determine exactly where the spots originated.

Complete with base, tubes, reflector, starters, transformers, and hanging chains—ready for use on 110V AC line. Only $75.00 F.O.B., Charlotte.

Send us your order today. Satisfaction guaranteed.

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MANUFACTURING CHEMISTS AND CONSULTANTS
1122 So. Boulevard Charlotte, North Carolina

ing, arching, or bridging of materials is prevented.

Eriez Mfg. Co., Erie, Pa.

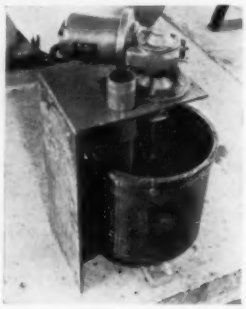
Do you want more data? Write supplier or use card on page 237; list F-219

Mist Lubrication Device. A new device for automatically applying a controlled, pre-measured quantity of mist lubrication on open gears, chains, cams, rollers, eccentrics, slides and ways, etc., is called the "MistOmatic Spray Control." Designed for use in conjunction with the Lincoln power-operated, time-clock controlled centralized lubrication systems, it eliminates spoilage from drippage of excessive lubricant, conserves man-hours, and reduces fire and accident hazards.

Lincoln Engineering Co., Industrial Div., 5702 Natural Bridge Ave., St. Louis 20, Mo.

Do you want more data? Write supplier or use card on page 237; list F-220

Screener for Waste Water Saves Labor, Fuel. Costly shutdowns where waste water clogs equipment can be eliminated by using the Roto-Screen, a centrifugal screener originally developed to improve the efficiency of shell and tube type heat reclaimers used in dyehouses, etc. The unit is a perforated steel cylinder with an enclosed bottom. Installed in a sump and rotated at high speed, the Roto-Screen's "basket" forces away the solid particles in suspension, by centrifugal force, allowing clear liquid to be pumped through the basket and delivered to the heat reclaimers. When corrosive liquids such as dye liquor are to be handled, the basket is made of Type 316 stainless steel.



Patterson-Kelley Co., Inc., 1520 Gaylord Ave., East Stroudsburg, Pa.

Do you want more data? Write supplier or use card on page 237; list F-221

Tapes Speed Slashing Operation. Two new all-purpose masking tapes, designated Permacel 708 and Permacel 718, utilize flat 30-lb kraft paper backings which are specially processed and impregnated to give flexibility and internal stretch. Adhesive on both is transparent, rubber-based, and pressure-sensitive with special heat and stain resistant properties. May be utilized at slashers, as sealer for cartons, and for protection of polished and machined surfaces during transit.

Permacel Tape Corp., New Brunswick, N. J.

Do you want more data? Write supplier or use card on page 237; list F-222

General Purpose Time Switch. Greater reliability is one feature of a new general-purpose, heavy-duty time switch designated TSA-40. It will turn electric circuits on or off at any time of day. Furnished with either a plain dial for fixed time setting or an astronomic dial for dusk and dawn schedules. One or more days may be skipped during a week of operation with the use of an omitting device.

General Electric Co., Instrument Dept., Schenectady 5, N. Y.

Do you want more data? Write supplier or use card on page 237; list F-223

New Dyes for Wool, Silk, Nylon. Lanasyn Yellow GLN p.a.f. is a homogeneous metallized dyestuff yielding bright, neutral yellow shades on wool, silk, and nylon. Lanasyn Red BL p.a.f. imparts a bluish red color to the same fibers; apart from its use in self-shades, it is

particularly valuable as a shading element for beige and gray tones. Both have all the dyeing and fastness properties characteristic of the Lanasyn range and are suitable for Vigoureux printing.

Sandoz Chemical Works, Inc., 61 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 237; list F-224

Oiling System for Hard-to-Get-At Places. "Lub-O-Jet" is centrally located, easily accessible, positive, self-contained oiling system that delivers oil, under pressure, to various points on all types of equipment such as line shafts, gears, chains, cams, felt pads, etc. A pressure pump is a centrally located, easily accessible, reservoir. Oil supply is always visible. Six-outlet distributor is connected to reservoir assembly. Plastic, transparent, and flexible tubing is attached to distributor outlets and run to bearing points which can be as much as 100 ft away, in any direction. Small amount of oil is fed to all points simultaneously each time pump is stroked.

Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee 12, Wis.

Do you want more data? Write supplier or use card on page 237; list F-225

2000-lb Capacity Single-Mast Lift Truck. Now available for both outside and inside production is the pneumatic-tired Hyster QN-20 "Monomast" lift truck of 2,000-lb capacity at 24" load centers which lifts one-third faster, and offers advantages of greater safety, greater stability, and far greater visibility. Operates efficiently in narrow aisles and crowded warehouse areas.

Hyster Co., 2902 N. E. Clackamas St., Portland 8, Ore.

Do you want more data? Write supplier or use card on page 237; list F-226

Laboratory Homogenizer. The Gaulin laboratory homogenizer is specially designed for research, pilot plant, or limited production operations. It is a single plunger, positive displacement machine mounted on a common base with no moving parts exposed. Unit may be disassembled in minutes and all parts in contact with the product readily removed for inspection, cleaning, or replacement of components.

Manton-Gaulin Mfg. Co., Inc., Everett, Mass.

Do you want more data? Write supplier or use card on page 237; list F-227

Trucks Have Snag-Proof Interiors. A husky box truck of extra tough vulcanized fiber has a floor and sides so smooth, inside and out, that there are no rough edges or splinters to snag delicate fabrics, yarns, etc. Heavy gauge electro-galvannealed top molding and outside reinforcing ribs, running completely around the body, are specially plated to combat rust and corrosion and to add strength and endurance to the entire truck. Available in standard and custom designs.

Federal Fibre Corp., 3704 10th St., Long Island City 1, N. Y.

Do you want more data? Write supplier or use card on page 237; list F-228

Instant, Permanent Lubrication with Graphite Spray. "Spray Graph," the new, instant-drying, long-lasting graphite lubricant, is now available in 6-oz spray con-

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tainers. It may be applied to both metallic and non-metallic surfaces to increase life of moving parts, step up efficiency of operation, and reduce maintenance cost. Provides effective lubrication at temperatures ranging from 100 F below zero to 800 F. Does not pick up lint, dust or dirt. Oxidation, corrosion, and friction are greatly reduced and sticking is prevented.

American Resin Corp., 3215 North Sheffield Ave., Chicago 13, Ill.

Do you want more data? Write supplier or use card on page 237; list F-229

4000-lb Sit-Down Electric Lift-Truck. Overall length of a new sit-down electric lift truck of 4,000 lb capacity is only 67" to the face of the fork carriage, permitting operation comfortably in aisles as narrow as 10' 6". With no load the truck travels at from 6 to 6½ mph; under load, 5½ to 6 mph. Loads can be lifted at speeds of from 25 to 30 fpm; forks empty can be raised at 45 to 50 fpm.

Yale & Towne Mfg. Co., Yale Materials Handling Div., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

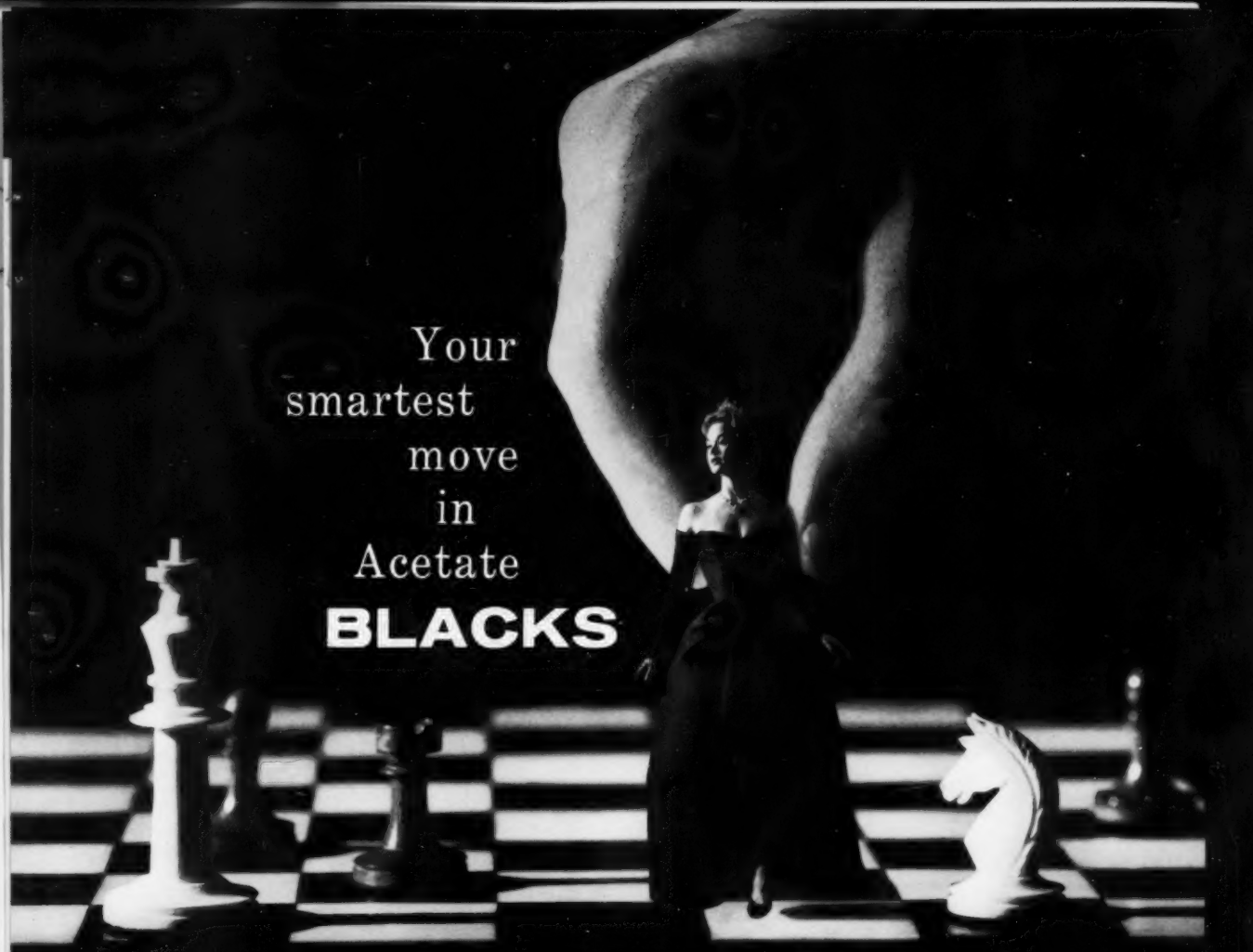
Do you want more data? Write supplier or use card on page 237; list F-230

New Books

Human Relations in the Industrial Southeast—A Study of the Textile Industry, by Glenn Gilman who is associate professor of industrial management at Georgia Institute of Technology, is a study of personnel history and practices in southern textiles, stressing the emergence and growth of the mills as regional institutions and clearly showing the distinguishing features of the industry. The impact of local, regional, and national influences on the developing pattern of human relations in the industry is traced from its origin to the present day, in order that the peculiar problems of the area may be understood. Recommended for supervisors, administrators, and executives of textile mills, the 395-page book is available from The University of North Carolina Press, Chapel Hill, N. C.; price, $5.00.

Economic Geography of Industrial Materials provides industrial management with a means of studying its product, process, and location attributes in light of current and future economic conditions in its locality, in its country, and in the world. Each chapter, with maps, tables, charts, and statistics, describes economic-geographic conditions necessary for profitable production. Such factors as location, climate, soil, topography, water resources, minerals, fuels, labor, capital, management, transportation, and markets, are discussed and evaluated to show profitable trends and conditions at present and in the future. Chapters on textile raw materials and textile manufacturing were written by N. M. Mitchell of Barnes Textile Associates. Available from Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y.; price, $12.50.

The second edition of a German book on dyeing and bleaching raw stock and yarn was recently published. Entitled *Faerben und Bleichen der Textilfasern in Apparaten*, by Weyrich, the 321-page book (in German) contains a lot of new material. Materials of construction of dyeing equipment are discussed, as well as complete descriptions of the various types of machines which are available for the methods of dyeing considered. There is a chapter concerned with bleaching of various fibers, while the principal part of the book is concerned with dyeing of wool and cellulosic fibers and yarns, using the various types of dyestuffs. Also included is a section on dyeing of synthetic fibers, including the polyamides, the polyacrylonitriles, and the polyester fibers, as well as blends. Publisher is Springer-Verlag, Reichpeitschufer 20, Berlin W 35, Germany.



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6-4 Ragan Self-Lubricating Rings. Complete data available on new self-lubricating rings, outlining unique construction and absence of wicks. Write Ragan Ring Co., 901 S. Main St., East Point, Ga.

6-5 Help on Size Problems. Information from Southern Sizing Company outlines how their superior sizing compounds and superior service can help make your mill run better. Write Southern Sizing Co., East Point, Ga.

6-6 Factoring Service. Booklet by Trust Company of Georgia gives advantages of factoring, including also information on general banking and pension plans. Write Trust Company of Georgia, Atlanta, Ga.

6-7 Cobble Tufting Machines. Literature available on Cobble Tufting Machines with Automatic Pattern Attachments. Shows how these machines open up new vistas to the tufting industry. Write Cobble Bros. Machinery Co., Inc., River Road, Chattanooga, Tenn.

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6-10 Sodium Hydrosulfite. Pamphlet by Virginia Smelting Co. describes uses and advantages of $Na_2S_2O_4$, a powerful reducing agent for dyeing, bleaching, stripping and reduction. Write Virginia Smelting Co., West Norfolk, Va.

6-11 Draper Repair Parts Catalog. Now available is a repair parts catalog for Draper E, K and Modified D Looms. Contains illustrations covering all mechanisms and constructions, together with complete listings. Write Draper Corporation, Hopedale, Mass.

6-12 Scientific Materials Handling. Brochure by Bennett Rose describes various materials handling devices offered textile industry, including pictures of each. Write Bennett Rose Co., Box 8, Roebuck, S. C.

6-13 Pluronic Grid. Color Booklet by Wyandotte tells how a tailor-made surfactant may be chosen by varying the molecular weight and/or the hydrophilic - hydrophobic ratio of the Pluronics. Write Wyandotte Chemical Corp., Wyandotte, Michigan.

6-14 Napthol Ratios Slide Chart. Slide guide available which quickly and accurately enables dyer or printer to determine Napthol Ratios. Free to persons writing on Company letterhead. Write Alliance Color and Chemical Co., 33 Avenue P, Newark 5, N. J.

6-15 Hydrogen Peroxide. New booklet covering the properties, uses and handling of hydrogen peroxide is now available. Illustrated with tables and diagrams, the text covers chemical reactions, handling and storage. Write Adv. and Sales Prom. Dept., Solvay Process Div., Allied Chemical & Dye Corp., 61 Broadway, New York 6, N. Y.

6-16 Processing Arnel Fabrics and Blends. Bulletin provides information on dyeing, printing, finishing and heat treating Arnel. Text, charts and diagrams included. Write for #TD-15, Celanese Corp. of America, Textile Division, Marketing Dept., Charlotte, N. C.

6-17 Get Rid of Wrinkles. Brochure shows how Mount Hope "free wheeling" expanders keep fabrics smooth, at full width, without distortion wherever goods are rolled, nipped, dyed, washed, dried or batched. Write Mount Hope Machinery Co., Taunton, Mass.

6-18 Saco-Lowell Positrol Slasher. Color Brochure gives 14 advantages of the Saco Lowell Positrol Slasher. Includes photographs, cut-away drawings, sectional pictures, diagrams, Microphotographs. Write Saco-Lowell Shops, 60 Batterymarch St., Boston 10, Mass.

6-19 Little Packaging Library. Series of booklets by Hinde & Dauch provides complete information of shipping in corrugated boxes. A must in every shipping department. Write Hinde & Dauch, Sandusky, Ohio.

6-20 Penford Gums in Textiles. Brochure tells how the wide range of viscosities and the excellent properties of Penford Gums make them desirable for warp sizing spun yarns. Penick & Ford, Ltd., Inc., 420 Lexington Ave., New York 17, N. Y.

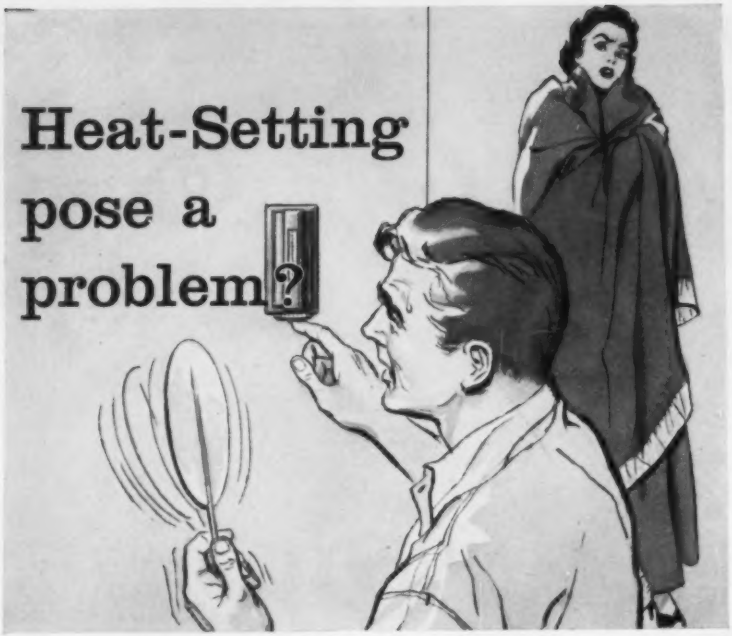
6-21 Rubber Covered Rolls. Catalog covering the various types of rubber rolls made of natural rubber, Buna-S, neoprene, Buna-N (Hycar) or Compar. Write Dept. TI, Tyer Rubber Company, Andover, Mass.

6-22 How to Select Industrial Signals. This is the most comprehensive summary bulletin ever published in the American signal industry on the proper use of modern visual and audible signals for industrial manufacturing plants. Write Federal Sign and Signal Corporation, Signal Division, 8700 S. State Street, Chicago 19, Illinois.

6-23 Coleman Instruments, Inc. Manual giving the pertinent facts about the modern instruments and accessories offered by Coleman Instruments, Inc., along with brief discussion of the analytical sciences which they serve. Write Coleman Instruments, Inc., 318 Madison Street, Maywood 1, Illinois.

6-24 Morton "PCB" Rock Salt. Free booklet tells how "PCB" Rock Salt saves money on sequestering agent, eliminates streaks and off-shading, and increases color intensity. Write Morton Salt Co., Industrial Division, Dept. T.I.-3, 120 So. LaSalle St., Chicago 3, Ill.

6-25 Rubber Covered Rolls. Catalog lists complete stock of rubber covered rolls for textiles, including rolls made to specification. Detailed descriptions. Write Dept. TI, Tyer Rubber Co., Andover, Mass.



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11. "WHERE DID THEY HIT PAY DIRT?" — Booklet describes how many manufacturing concerns have come South and why they found it profitable. Gives industrial advantages of the Southeast. Write CENTRAL OF GEORGIA RAILWAY, Industrial Development Department, 501 Rhodes Haverty Bldg., Atlanta 3, Georgia.

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24. THE CHEMSTRAND NYLON STORY — Booklet describes one of the greatest industrial ventures of the textile industry in the South — the birth and growth of Chem-trand Nylon. — CHEMSTRAND CORP., 350 Fifth Ave., New York 1, N. Y.

PLANT & PLANT MAINTENANCE . . .

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103. HUMIDIFICATION, EVAPORATIVE COOLING — Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment. — AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

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111. CERTIFIED CLIMATE AIRCHANGER SYSTEM — Bulletin describes Certified Climate Airchanger System as used with direct humidification for partial or complete air conditioning. — PARKS-CRAMER CO., Fitchburg, Mass.

112. HARDWOOD FLOORING — Booklet entitled "Specialist in Manufacturing of Hard Maple Flooring for textile plants." For complete information, write — CONNOR LUMBER & LAND COMPANY, P. O. Box 810, Wausau, Wisconsin.

113. COTTON MILL EQUIPMENT — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc. — WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

114. PENETRATING WOOD FINISH — Bulletin gives application, uses and application specifications of floor seals for textiles. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIVISION, Wilmington, Delaware.

115. FOAMGLAS — Illustrated brochure features information on how the use of Foamglas cellular glass insulation solved the severe insulating problems of leading users. — PITTSBURGH CORNING CORP., One Gateway Center, Pittsburgh 22, Pa.

116. STOP CORROSION — Details on speed Rex paint for metal wood and concrete maintenance solving condensation problems. — TRUSCON LABORATORIES, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

117. CLEANING SYSTEMS — Booklet entitled "Certified Climate and Cleaning Systems" gives latest information on system. Products and uses fully discussed with two story layout of Certified Climate central station air conditioning system. — PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

118. LIQUIDATION INFORMATION — Information available on how wto profitably dispose of mill properties being liquidated. Tells how Comer will buy, sell and relocate industry in your former site. — COMER MACHINERY CO., 884 W. Peachtree St., Atlanta, Ga.

120. STAINLESS STEEL FOR TEXTILES — 40-page booklet gives applications and advantages of stainless in textile plant equipment of all types. — ALLEGHENY LUDLUM STEEL CORP., Dept TI-71, Oliver Bldg., Pittsburgh 22, Pa.

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125. STATIC ELIMINATION — Bulletin by Simco describes effective, simple, safe and inexpensive means of eliminating static. — SIMCO COMPANY, 980 Walnut St., Lansdale, Pa.

126. TOLEDO TRUCK SCALES — Booklet tells how mills may save on installation and throughout long, useful lift of Toledo Truck Scales. Gives capacities and advantages. — TOLEDO SCALE COMPANY, Toledo 1, Ohio.

127. SOLENOID VALVES — Bulletin "V" lists sizes from ⅛ inch to 3 inches; values for normally open or closed service; stainless steel or Jenkins disc seats; three way solenoid valves, etc.; typical installations. — THE JOHNSON CORP., Three Rivers, Mich.

130. STAINLESS STEEL FABRICATION — Illustrated color booklet by Sims describes the advantages of stainless steel with regard to textile operations. Also includes information on ventilating and drying, slasher exhaust, and materials handling systems. — SIMS METAL WORKS, West Point, Ga.

131. "AIR-PROCESSING" — Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

132. AUTOMATIC BOILERS — Bulletin describes POWER-MASTER Automatic Boilers for light and heavy oil; gas or combination Gas-Oil Firing. Complete table of data. — ORR AND SEMBOWER, INC., Reading, Pa.

133. AIR LINE FILTERS — Catalog describes various air line filters for removal of oil, corrosive moisture, abrasive pipe scale, rust, and other solids from compressed air lines. Write for Catalog No. 700. — C. A. NORGREN CO., 3450 So. Elati St., Englewood, Colo.

135. COLOR CONDITIONING — Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid. — E. I. DU PONT DE NEMOURS & CO., INC., FINISHES DIV., Wilmington 98, Delaware.

136. SOLVENT DETERGENTS. Revised sixteen-page, illustrated booklet tells how solvent detergents, used without heat, remove carbonized grease and oil and certain types of paint, and provide temporary rust protection after cleaning. Write — OAKITE PRODUCTS, INC. 126C Rector St., New York 6, N. Y.

138. METAL CONVEYOR BELTS — Recent catalog describes and illustrates Ashworth's entire range of manufacture, including the new Flat Wire Belt design and application, along with their Woven Wire Constructions and Positive Drive Chain Edge belts. —ASHWORTH BROS. INC., METAL PRODUCTS DIV., Fall River, Mass.

146. FUNCTIONAL GLASS BLOCK DATA — Folder shows in detail daylighting function of Light-directing and Light-diffusing Functonal Glass Blocks. — PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS — Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems. — ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES — Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines — also flock, raising and cylinder brushes. — M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. LAMINATED TEXTILE PLASTICS — Booklet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry. — SYNTHANE CORPORATION, TEXTILE DIVISION, Oaks, Penna.

161. AUTOMATIC CLEANING EQUIPMENT — Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit. — AMERICAN MONORAIL CO., 12107 Athens Ave., Cleveland 7, Ohio.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE — Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors.— G. H. TENNANT COMPANY, 2530 N. Second St., Minneapolis 11, Minn.

173. BLOWERS AND EXHAUSTERS — Bulletin No. 3014-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings. — BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

174. PAINT STRIPPING BOOKLET — Illustrated booklet providing helpful data on latest materials and methods for simplified stripping of paint. Methods described include: (1) steam gun; (2) hot flow-on; (3) cold spray; and (4) tank immersion. — OAKITE PRODUCTS, INC., 22 Thames St., New York 6, N. Y.

181. AIR FILTRATION — Bulletin 234 describes and illustrates the Auto-Airmat, which is the Automatic Dry-Type air filter. Principle of operation, performance, characteristics, construction and installation fully discussed. — AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

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203. TREADED LEATHER BELTING — This 16 page booklet describes Houghton's line of patented, specially treaded leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section. — E. F. HOUGHTON & CO., Philadelphia, Pa.

205. MAINTENANCE OF VARIABLE SPEED DRIVES — Bulletin describes and illustrates the simple but comprehensive program available to keep Reliance V-S Jr. Drives in operation at peak efficiency.—RELIANCE ELECTRIC & ENGINEERING CO., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

208. CUTLER-HAMMER MOTOR CONTROL — Booklets describe the combination starters for the textile industry, for roving frames and spinning frames, loom switch and Cutler-Hammer Motor Control for textile cards. — CUTLER-HAMMER, 315 N. 12th St., Milwaukee, Wisconsin.

209. STEEL PULLEYS — Pictorial review of American Steel Pulleys, their manufacturing processes and some of their end uses. Textile pulleys are featured. — AMERICAN PULLEY CO., 4200 Wissahickon Ave., Philadelphia 29, Pa.

212. GATES TEXTILE ACCESSORIES — Handy pocket-size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belts, evener belts, harness straps, take-up roll covering, and others. — THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

213. LUBRICATION OF ELECTRIC MOTORS — Illustrated bulletin on lubricating and cleaning ball and roller bearings on electric motors. — NEW YORK & NEW JERSEY LUBRICANT COMPANY, 292 Madison Ave., New York 17, N. Y.

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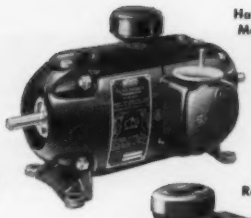
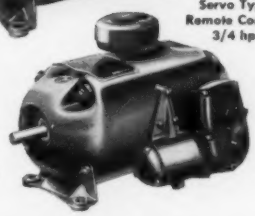


Handwheel Type Manual Control 3/4 hp



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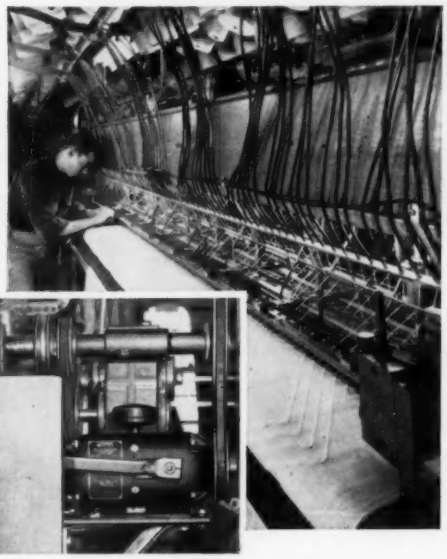
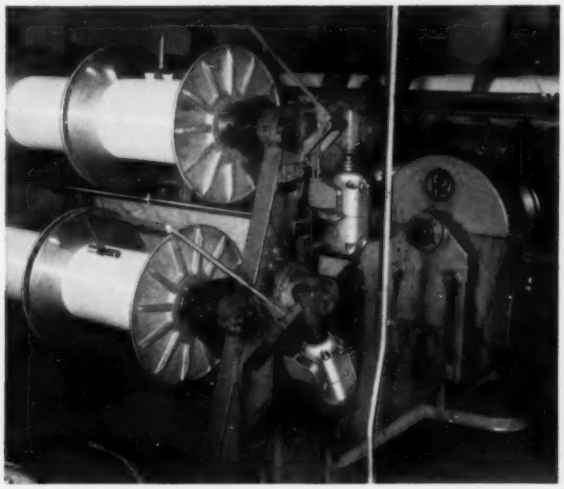


Cabin Crafts, Inc., Dalton, Georgia, makers of tufted textiles, uses Model TR3 Vickers Hydraulic Transmissions to *accurately control the varying lateral position* of the cloth fed at a fixed rate to the fixed position needles that do the tufting. Automatically, the continuous and accurate speed change enables them to manufacture varying patterns in tufting not practical by conventional methods of speed control. New patterns and old patterns alike can be made better and faster because of the extremely sensitive response of Vickers Hydraulic Transmissions to input signals.

2 REDUCED THREAD BREAKAGE



At the E. Richard Meinig Co., Reading, Penna., Model TR3 Vickers Hydraulic Transmissions are used to drive beam rolls of cotton or nylon filament into knitting machines. *Tension of the thread is accurately controlled* due to the infinitely variable speed and the rapid, precise response of the transmissions to input signals. Thread breakage is reduced to a minimum, resulting in increased production, better quality and pattern control. Also, it is possible to run elastic materials on a standard machine with this modification. Maintenance has been negligible since the installation of these TR3 Transmissions in 1948.

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There are numerous other applications in the textile industry where the precise control of variable speed or tension provided by Vickers Variable Speed Hydraulic Transmissions means a better product at a reduced cost. Additional important advantages are automatic overload protection that prevents damage to the machine and the virtual absence of maintenance and downtime. The TR3 is available with a Servo (for use with V dancer rolls, cams, pattern wheels, etc.) or manual control as shown at upper right. *Write for Bulletin 47-408.*

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216. BALL BEARINGS FOR TEXTILE MACHINERY — A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing. — THE FAFNIR BEARING CO., New Britain, Conn.

222. AUTOMATIC PRODUCTION CONTROL — Booklet by Reeves Pulley Company, shows application of many automatic processes and controls to the textile industry. Well illustrated, it contains engineering data quite useful to anyone interested.—REEVES PULLEY COMPANY, Columbus, Indiana.

223. LUBRICATION OF BEARINGS — Booklet entitled "Lubrication and Maintenance of Ball and Roller Bearings" gives helpful list of do's and don'ts to prolong bearing life. Also includes valuable information on storage and handling of lubricants. — NEW YORK & NEW JERSEY LUBRICANT CO., 292 Madison Ave., New York 17, N. Y.

225. HYDRAULIC SLASHER DRIVES — Color booklet by Vickers shows how hydraulic drives provide an economical approach to improved slasher operation. Has detailed pictures and enumerates advantages. — VICKERS, INC., 1036 Peachtree St., Atlanta, Ga.

228. NEW NEEDLE OIL — Booklet by Shell gives facts on Vexilla Oil 417, which gives 12 times more rust protection during operation and during shut-down periods. — SHELL OIL CO., 50 West 50th St., New York 20, N. Y.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY — Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive. — DODGE MANUFACTURING CORP., Mishawaka, Indiana.

230. INDUSTRIAL GREASES — Now available from Sinclair is a bulletin detailing qualities and specifications of multi-purpose lithium soap industrial greases. — A. S. RANDAK, SINCLAIR REFINING CO., 600 Fifth Ave., New York, N. Y.

232. "VARI-PITCH" SHEAVE BULLETIN — Stationary and motion control of "Vari-Pitch" sheaves for speed variation up to 76% by means of pitch diameter adjustment, capacities 1 to 600 HP are described in new bulletin. — ALLIS-CHALMERS MFG. CO., Milwaukee 1, Wisconsin.

233. LEATHER BELTING — Booklet by Atlanta Belting Co., describes comprehensively the selection, installation, and proper maintenance of modern leather belting. — ATLANTA BELTING CO., 508-510 Whitehall St., S.W., Atlanta, Ga.

234. SPINDLE OIL — Color brochure describes "Gulfspin," showing how it insures against excessive wear in cast iron bolsters and provides freedom from spindle wobble. — GULF OIL CORPORATION, Gulf Bldg., Pittsburgh, Pa.

235. JOHNSON LEDALOYL BEARING BRONZE — Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings. — JOHNSON BRONZE COMPANY, New Castle, Pa.

237. MOTOR CONTROL — Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed. — CUTLER-HAMMER INC., Milwaukee, Wisc.

238. TEXTILE LEATHERS CATALOG — Catalog by J. E. Rhoads & Sons gives characteristics and advantages of Rhoads "Tannate" leathers. Complete line is listed and described, and tips for correct installation. Copiously illustrated. — J. E. RHOADS & SONS, 2100 W. Eleventh St., Wilmington 99, Del.

240. CATALOG OF NEEDLE BEARINGS — New catalog conveniently presents design, application and use data for five types of needle bearings. Actually an engineering short course on bearings with visual index units. — THE TORRINGTON CO., Torrington, Connecticut.

253. TEXTILE LUBRICATION — "Lubrication" a magazine published by the Texas Co. is available. Shows methods and means of lubricating chain drives in very comprehensive form. — THE TEXAS CO., 135 East 42nd St., New York 17, N. Y.

256. METERED LUBRICATION. Booklet entitled "From Fiber to Fabric." Shows advantages of central lubrication systems as applied to various departments of textiles. Write — BIJUR LUBRICATING CORP., Rochelle Park, N. J.

265. SERVICE PROCEDURE FOR BALL BEARINGS — A helpful manual for maintenance engineers giving helpful hints on disassembly, inspection, cleaning, lubrication, and replacement of ball bearings in any mechanism. — NEW DEPARTURE, DIVISION OF GENERAL MOTORS CORP., Bristol, Conn.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS— Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

302. TEXTILE INSTRUMENTATION—New booklet gives details on Brush Lapcheck, Brush Tension Analyzer, Brush Imperfection Counter, and Improved Uniformity Analyzer. Pictures uses and capacities of each machine discussed. — BRUSH ELECTRONICS CO., 3405 Perkins Avenue, Cleveland 14, Ohio.

304. WASTE HEAT RECOVERY — Color booklet describes Bready System of waste heat recovery from polluted or soiled waste water. Includes pictures and complete facts. — LUDELL MFG. CO., 5200 West State Street, Milwaukee, Wisconsin.

305. AUTOMATIC MOISTURE CONTROL—Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics.—HUNTER CONTROLS, INC., DIV., JAMES HUNTER MACHINE CO., North Adams, Mass.

310. HOW TO SELECT LIQUID METERS — Helpful free bulletin covers meters for crudes, soap solutions, hot and cold water and other chemical solutions that can be handled by composition bronze meters. Write for bulletin 566UTI. — NEPTUNE METER CO., 10 W. 50th St., New York 20, N. Y.

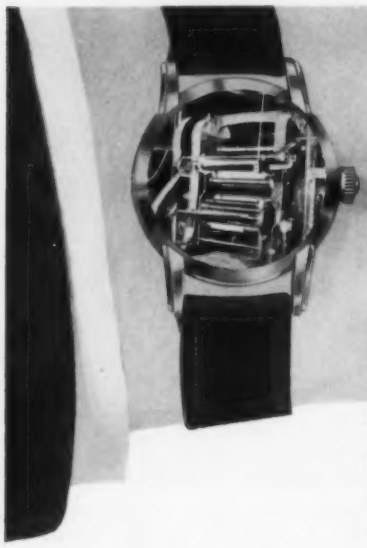
313. "THE FAIRBANKS VALVE COMPARISON CHART" — New reference manual important in specification, ordering, and using of bronze and iron-body valves. — THE FAIRBANKS COMPANY, 393 Lafayette Street, New York 3, N. Y.

315. MICRO SWITCH BULLETIN — Complete selection of bulletins featuring Micro Switch products is now available. Includes prices, characteristics, applications, etc. — MICRO SWITCH DIV., MINNEAPOLIS-HONEYWELL REGULATOR CO., Freeport, Ill.

316. MOISTURE CONTROLLER AND INDICATORS — Literature available from Strandberg Engineering covers indicators for slashers, tenters, etc., for direct connection to pickers, and automatic controllers for connection to same. — STRANDBERG ENGINEERING LABORATORIES, 416 W. Market St., Greensboro, N. C.

321. RED-RAY BURNERS — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame. — RED-RAY MFG. CO., 445 W. 45th St., New York, N. Y.

324. STROBOTAC — Informative reprint, "Strobotac Boosts Efficiency in Woolen and Synthetic Mills." — GENERAL RADIO CO., Cambridge 39, Mass.



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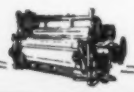

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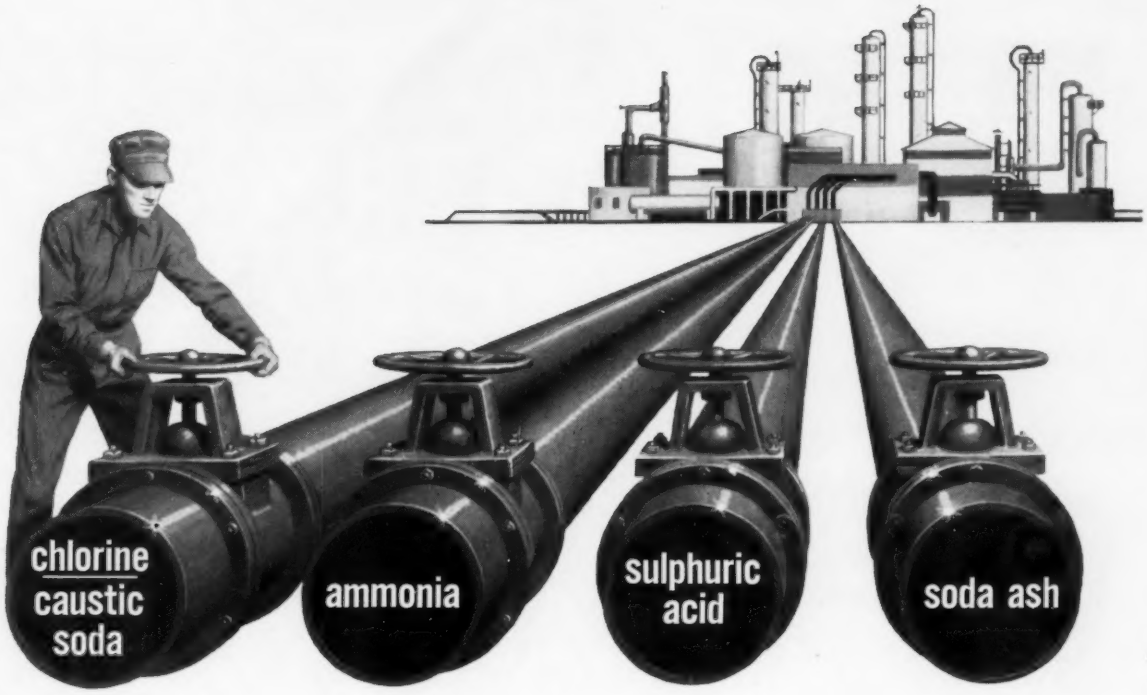

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337. COUNTING DEVICES — Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application. —TRUMETER COMPANY, 1306 Broadway, New York 1, N. Y.

339. NEW LUBRICATED PLUG VALVES—Illustrated booklet by The William Powell Co. features a new line of sami-steel and steel lubricated plug valves. Advantages include quick and positive shut off. — THE WILLIAM POWELL COMPANY, 2525 Spring Grove Ave., Cincinnati 22, Ohio.

CARDING, SPINNING, WINDING . . .

401. LUMMUS DUSTLESS, STEEL BLENDING FEEDERS — Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking. — ALDRICH MACHINE WORKS, Greenwood, S. C.

402. AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS — 24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulation of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings. — THE AMERICAN MONORAIL CO., Cleveland, Ohio.

403. TRAVELING CLEANERS — 4-page bulletin describes the improved Parks-Cramer Frame and Room Cleaners including the Underframe and Floor Sweepers. — PARK-CRAMER CO., Fitchburg, Mass.

404. LAPLESS ENDLESS SPINNER — Bulletin and full information will be supplied on lapless endless spinner and coning belting. — TON-TEX CORPORATION, 31 Columbus Ave., Englewood, N. J.

408. CARD GRINDING INFORMATION — Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information. — B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

411. SHEET METAL WORK — Pamphlet describes spinning cylinders, aspirators, card screens, sheet metal specialties. — GASTONIA TEXTILE SHEET METAL WORKS, INC., 222 East Long Avenue, Gastonia, N. C.

412. SERVICE FOLDER — Folder covers textile metal products including spinning and twisting cylinders, card screens, etc. — JENKINS METAL SHOPS, INC., Gastonia, N. C.

413. HIGH SPEED, AUTOMATIC QUILLER — Color booklet by Schlafhorst describes the "Autocopser" Automatic Quiller. Gives advantages, space requirements, etc. — TERRELL MACHINE CO., INC., Charlotte, N. C.

414. WORSTED SPINNING — Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top yarn in five economical and efficient stages. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

415. DOUBLER-TWISTER FOR LARGE PACKAGES — Bulletin describing two new machines producing straight or tapered top bobbins. Suitable for filament or spun yarns up to three pound capacity. Individual threads top motion fully discussed — FLETCHER WORKS, INC., Philadelphia, Pa.

416. THE BRIEF SAGA OF THE RING TRAVELER — An interesting history relative to the ring traveler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered. —NATIONAL RING TRAVELER CO., Pawtucket, R. I.

417. FEATHERTOUCH DRAFTING — Booklet describes in detail with pictures the most uniform drawing, the strongest drawing with the highest production per frame at the lowest cost. — IDEAL INDUSTRIES, INC., Bessemer City, N. C.

419. TEXTILE APRONS — Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery. — TEXTILE APRON COMPANY, East Point, Ga.

422. WARPER BEAMS — Folder describes the high speed for rayon tire cord, cotton warper beams, cast aluminum end supports and large diameter heads. — U. S. BOBBIN SHUTTLE CO., Lawrence, Mass.

423. SPINDLE OILING MACHINE — Information available on new Spindle Oiling Machine. Features include filter system to clean oil for reuse; smaller size for narrow aisles. — WICACO MACHINE CORP., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

424. GREASE-SEALED, ANTI-FRICTION ROLLS — Booklet contains description and engineering drawings of the Cole grease-sealed, anti-friction rolls. Also contains information on dual apron controlled drafting units. — COLE ENGINEERING CORP., P. O. Box 153, Columbus, Ga.

425. HANDY REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc. — VICTOR RING TRAVELER CO., Providence, R. I., and Gastonia, N. C.

426. UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unirail Uptwister which gives you higher yarn quality and better packages at faster speeds and lower costs, according to the bulletin. Well illustrated with advantages discussed. — UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence, R. I.

429. BETTER FLYER AND SPINDLE EFFICIENCY — Entertaining booklet by Ideal Machine Shops gives facts about Flyers and Spindles which have helped many mills gain more efficient production, better yarn quality. — IDEAL MACHINE SHOPS, INC., Bessemer City, N. C.

431. TEXTILE VACUUM SYSTEM — Color bulletin by Spin Sa Vac describes application of their vacuum system to drawing, roving and spinning processes, and for the removal of broken ends, fly or sliver. Complete diagrams and shots of typical installations. — SPIN SA VAC CORPORATION, 1438 South Tryon St., Charlotte, N. C.

432. PRECISION TEXTILE WINDING — Bulletin on Kidde Tensions and Density Control for winding rubber cones. — WALTER KIDDE & CO., INC., Belleville, N. J.

433. PERMANENT PLATE MAGNETS — Bulletin shows how Eriez Magnetic Separators prevent fires and protect machinery from tramp iron in all types of textile mills. — ERIEZ MFG. CO., Erie, Pa.

434. SPINNING AND TWISTER RINGS—Catalog and price list now available on Whitinsville "Diamond Finish" spinning and twister rings. Complete details and pictures. — WHITINSVILLE SPINNING RING CO., Whitinsville, Mass.

435. DOUBLE DECK TWISTERS — Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER — Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording. — SCOTT TESTERS, INC., Providence, R. I.

437. PRECISION GEAR BULLETINS — Now available from Precision Gear are bulletins on machinery products for cleaning and picking, roving frames, spinning and twisting and a general catalog on gears. — PRECISION GEAR AND MACHINE CO., 2001 N. Tryon St., Charlotte 2, N. C.

438. HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING — Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go direct to quilling or warping without redrawing. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

439. PNEUMAFIL SUCTION CLEANING SYSTEMS — Booklet describes types of Pneumafil Systems, gives details of new Collector Unit model C-4. New type LFC Pneumafil is also discussed. Diagrams, comparison charts and installation pictures included. — PNEUMAFIL CORP., Charlotte 8, N. C.

440. CUSTOM MADE THREAD GUIDES — Color brochure describes complete line of American Lava Company's thread guides. Composition, properties, specifications of all designs included. — AMERICAN LAVA CORPORATION, Chattanooga 5, Tenn.

444. OPENING AND CLEANING MACHINERY—Color brochure by Dodenhoff describes their waste machine, enclosed feeder, conveyors and cleaner. Specifications included with pictures. — W. D. DODENHOFF CO., Box 178, Greenville, S. C.

445. ROLLER BEARING SPINDLES — Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described. — THE MARQUETTE METAL PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

447. CONE WINDER — Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply. — FOSTER MACHINE COMPANY, Westfield, Mass.

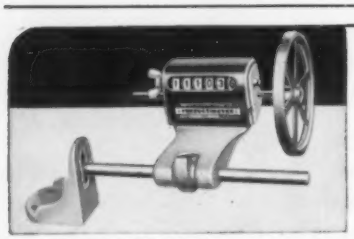
448. AUTOMATIC BLENDING SYSTEM—Dodenhoff system, called "Fiber Meter" is fully described in color booklet. Gives actual operating results, shows pictures and illustrates typical conversion of old fashioned systems. — W. D. DODENHOFF CO., 745 Loundes Hill Road, Greenville, S. C.

449. NEW CONDENSER TAPE — Literature by Benjamin Booth describes newly introduced SUPR-O-TAPE, an impregnated fairic condenser tape. Shows actual sample of tape and gives complete prices. — BENJAMIN BOOTH CO., Allegheny Ave., & Janney St., Philadelphia 34, Pa.

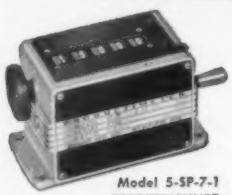
450. HIGH SPEED AUTOMATIC QUILLER — Color booklet describes the Schlafhorst "Autocopser," listing its advantages and giving dimensions. — TERRELL MACHINE CO., INC., P. O. Box 928, Charlotte, N. C.

451. ROLLER BEARING SPINDLE — Color booklet gives principal features and main advantages of SMM Roller Bearing Spindle. Detailed drawings included. — H. PHIL WORTH, Box 1555, Greenville, S. C.

452. PNEUMAFIL LINT-FREE CREEL — Color booklet describes the new Airfoil Design Pneumafil type LFC with Built-in Lint-Free Creel. Gives complete details and pictures. — PNEUMAFIL CORPORATION, Charlotte 8, North Carolina.



▲ MODEL H LINEAL



Model 5-SP-7-1
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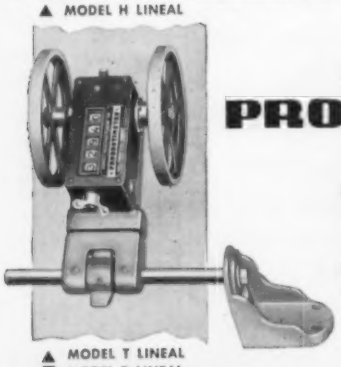

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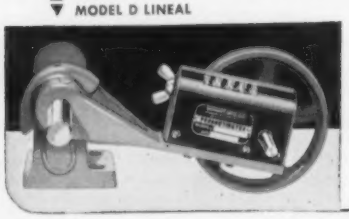

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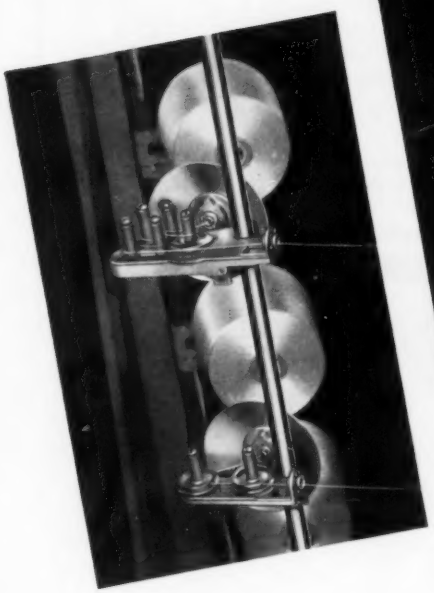
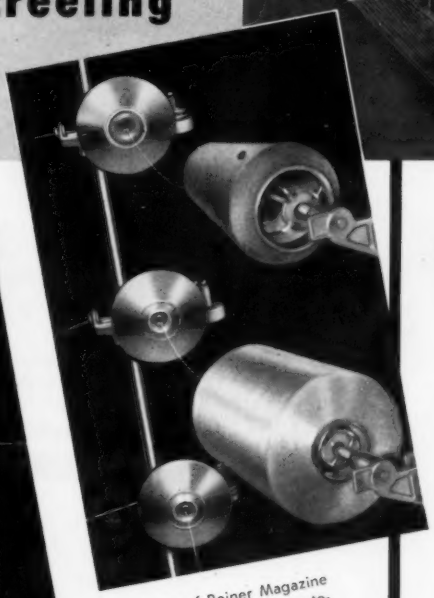
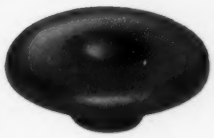




Left: View of Reiner Magazine Creel Post Tension, looking toward unit. Above: View from opposite side. Both photos courtesy of Robert Reiner, Inc., Weehawken, New Jersey.

AlSiMag guides for creeling and warping speed processing, improve quality, cut down-time and prevent losses from yarn damaged by undetected guide failure. AlSiMag guides are smooth, extremely hard, homogeneous—thus have no point of sudden failure. Physical and dimensional uniformity assist in better yarn control. The lower cost of AlSiMag guides per pound of processed yarn is thoroughly proven in all types of textile operations.

Check these facts with your figures! Standard design samples on request; custom-made samples at reasonable cost. Write today.



Reiner CR-1803
AlSiMag GE-19123

Reiner CR-1813
AlSiMag GE-22259

Reiner SW-1670
AlSiMag GE-26653

Reiner CR-1806
AlSiMag GU-8146-D

Reiner CR-1807
AlSiMag GE-21111

Reiner CR-1952
AlSiMag GE-24681-A

Reiner CR-1804
AlSiMag GE-19122

Reiner CR-1892
AlSiMag GE-23138

Reiner CR-1805
AlSiMag GE-19121

These guides are stocked by Reiner for immediate shipment in AlSiMag 193 material (conductive—assists in dissipating static). Also available from American Lava after regular production intervals in same material or in AlSiMag 192 (non-conductive) or AlSiMag 614 (a superhard material which is economical where excessive wear is experienced).

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459. TENSION CONTROLS — Folder describing tension compensation and automatic tension controls. Three models — Standard, Warp, and Double Disc fully described with specific application. — WALTER KIDDE & CO., INC., 190 Main St., Belleville 9, N. J.

461. PRECISE WIND MACHINE — Form A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns. — FOSTER MACHINE COMPANY, Westfield, Mass.

462. TEXTILE MACHINERY PARTS CATALOG — A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Lug Straps, etc. — DAYTON RUBBER CO., Dayton, Ohio.

467. CARD CLOTHING — 8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages. — BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney Streets, Philadelphia, Pennsylvania.

469. SHORT CUT TO STAPLE FIBER SPINNING — Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. — TURBO MACHINE COMPANY, Lansdale, Pa.

470. RATCHET DRIVE LUBRICATOR — Technical reference sheet describing an automatic ratchet-driven lubricator is offered. Describes in detail the key features, includes photographs. — BIJUR LUBRICATING CORP., 151 W. Passaic Avenue, Rochelle Park, N. J.

471. FACTS ABOUT YOUR FLYERS AND SPINDLES — Booklet by Ideal Machine Shops shows how smooth Flyer and Spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins. — IDEAL MACHINE SHOPS, Bessemer City, N. C.

472. TWISTING MACHINERY — Bulletin gives outstanding features, specifications facts and useful information on Novelty Yarn Twisters for Cotton, Silk, Worsted and Rayon Yarns. — COLLINS BROTHERS MACHINE COMPANY, 647 Roosevelt Ave., Pawtucket, Rhode Island.

473. ALUMINUM SECTION BEAMS — Information available on advantages of Hayes beams. Includes prices and delivery schedules. — HAYES INDUSTRIES, INC., Jackson, Mich.

474. BALL BEARING COMB BOXES — Southern States Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut-a-way views shown. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Ga.

475. TEXTILE ROLL COVERINGS AND MILL SUPPLIES — Color booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies roll covering for cotton, silk and synthetic and woolen and worsted systems. An excellent guide book. — ARMSTRONG CORK CO., INDUSTRIAL DIV., Lancaster, Pa.

476. TEXTILE FIBER OPENER FOR COTTON, SYNTHETICS, WOOL — New brochure by Cen-Tennial Cotton Gin Co. gives complete data on the Cen-Tennial Opener which incorporates improvements on the original SRRL Opener. Complete operating procedure is described. — CEN-TENNIAL COTTON GIN CO., Columbus, Ga.

478. TIPS ON CARDING PROCEDURE—Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. Bulletin is a reprint of section appearing on green paper in this issue. — ASHWORTH BROTHERS, Fall River, Mass.

485. WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter. — A. B. CARTER, INC., Gastonia, N. C.

485. COTTON SIZING WASTE PROBLEM SOLUTION — Booklet describes the use of soluble, low-pollutional CMC in place of starch and how this can reduce costs. — HERCULES POWDER CO., Wilmington 99, Delaware.

WEAVING, SLASHING . . .

501. LOOMS — An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed. — CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

502. COUNTING AND MEASURING DEVICES— Condensed textile catalog illustrating and describing pick counters, hank counters, cut meters, measuring counters. Wide range of counting devices for production Recording on all types of textile machinery. — BEEDER-ROOT, INC., Hartford, Conn.

504. LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products. — E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

505. INNOVATION IN TEXTILE DRYING — Booklet by J. O. Ross gives details on Steam or Gas "Hot Air" Slasher for high speeds at low cost. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

506. SLASHING HINTS — A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split rods, weighing for the mix, tips on cooking equipment, storage in kettles, etc. — SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

508. LOOM PRODUCTION CHARTS — Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds. — RALPH E. LOPER CO., Greenville, S. C.

510. CONTROLLED SIZING — Brochure in color describes the legend, operation and specification of the new Griffin Size Machine. Features most important basic improvements in size machines in many years. — IRA L. GRIFFIN & SONS, P. O. Box 1576, Charlotte, N. C.

511. ALUMINUM BEAMS — Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types. — HAYES INDUSTRIES, INC., Jackson, Mich.

514. THE STORY OF STARCHES — Semi-technical booklet tells the story of starches and information on how they are produced, the creation of new specialty starches, the unique "man-made" starch derivatives, and the handling of starches. — NATIONAL STARCH PRODUCTS, INC., 270 Madison Avenue, New York 16, New York.

515. WARPING, SLASHING, WEAVING ARNEL YARNS — 8-page booklet preliminary information on Arnel Triacetate Yarns. — CELANESE CORP. OF AMERICA, TEXTILE DIVISION, Box 1414, Charlotte, N. C.

517. LOADING SYSTEM — Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices. — THE FOXBORO COMPANY, Foxboro, Mass.

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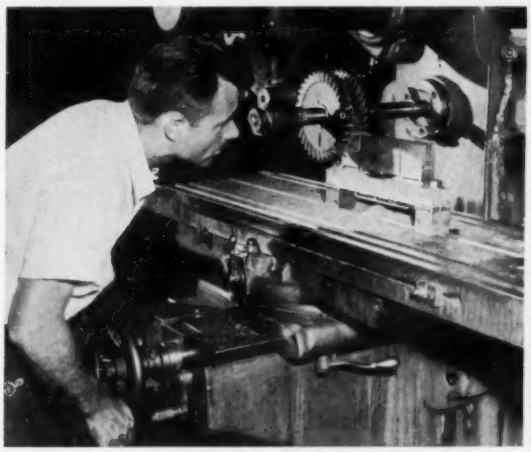

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525. STAINLESS DRY CANS — Bulletin describes advantages of Unistel Stainless Dry Cans including details of construction. Profusely illustrated. — UNISTEL TEXTILE MACHINE CORP., 225 Westchester Avenue, Port Chester, N. Y.

530. ROTARY UNIONS — New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count." — PERFECTING SERVICE COMPANY, Atando Ave., Charlotte, N. C.

537. WEST POINT'S HOT AIR SLASHER — Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Works. Detailed specification included. — WEST POINT FOUNDRY AND MACHINE WORKS, West Point, Georgia.

538. AIR SLASHER DRYER — Pamphlet by Proctor & Schwartz shows construction and operating details of the Proctor Air Slasher Dryer. Advantages listed and cut-away view shown. — PROCTOR & SCHWARTZ, INC., 7th St. and Tabor Rd., Philadelphia 20, Pa.

541. BOOKLETS ON COCKER CUSTOM BUILT EQUIPMENT — Six new bulletins available from Cocker include information on the high speed Warp Sizer, high speed Beam Warper, Cocker Creels and Tensions, Beam Back-Winders, Indigo Dyeing Ranges, Kettles, T-Boxes, etc. — COCKER MACHINE & FOUNDRY CO., Gastonia, N. C.

545. NOPCO CHEMICAL DATA SHEETS — Now available are Nopcostats, Nopco Sizes N and D. Important points in Warp Sizing, Interpretation of Analysis, Wetting Agents, Balanced wool and worsted oils, Acetate warp sizing, Viscose warp sizing, Rayon soaking. — NOPCO CHEMICAL CO., Harrison, N. J.

DYEING, FINISHING CLOTH ROOM . . .

601. CONTINUOUS PEROXIDE BLEACHING RANGES — Booklet gives illustrations and describes uses and gives specification of Ranges. — RODNEY HUNT MACHINE CO., 49 Mill St., Orange, Mass.

603. EMCO ROTARY CUTTER WINDER — Bulletin gives applications, sizes and exclusive features.— H. W. BUTTERWORTH & SONS CO., Bethayres, Pa.

604. DYEING, BLEACHING AND DRYING EQUIPMENT — Excellent color brochure by Morton describes their complete line of dyeing, bleaching and drying equipment for cotton, wool and synthetics. — MORTON MACHINE WORKS, 1718 3rd Ave., Columbus, Ga.

606. HYDRAULIC POWER UNITS — Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operating of hydraulic calenders, presses, hydraulic controls, e.c. — B. F. PERKINS & SON, INC., Holyoke, Mass.

607. RIBBON CALENDERS — Brochure features Dickerhoff Ribbon Calenders for the purpose of calendering, embossing, etc., of narrow fabrics. — ENGINEERING WORKS, HERM. DICKERHOFF LTD., Wuppertal Barmen, Western Germany.

608. WASHERS FOR SCOURING, BLEACHING, ACIDIFYING — Well-illustrated booklet shows how Sargent's modern, high-capacity, continuous process washers can help maintain quality and decrease costs. Contains operation diagram and good commentary on construction. — C. G. SARGENT'S SONS CORPORATION, Graniteville, Massachusetts, U.S.A., for bulletin 195.

609. WET PROCESSING MACHINERY — Complete file of bulletins on Riggs and Lombard Wet Processing Machinery available. Write for catalog index sheet giving summary. — RIGGS AND LOMBARD, INC., Suffolk Street, Lowell, Mass.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY — Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes pre-boarding and automatic boarding machines for hosiery. — PROCTOR & SCHWARTZ, INC., 7th and Tabor Rd., Philadelphia, Pa.

611. LOW COST DYEING — Bulletin by Blickman describes their fully enclosed, stainless steel Dyebox. Reports increased production per man hour and more runs per day at lower cost. Write for bulletin 7034.—S. BLICKMAN, INC., Gregory Ave., Weehawken, N. J.

612. JAMES HUNTER MACHINES FOR DYEING AND FINISHING — Comprehensive Catalog contains complete file of bulletins on all Hunter machines having application in dyeing and finishing. Excellent reference data for dyehouses. — JAMES HUNTER MACHINE CO., North Adams, Mass.

613. HERMAS TEXTILE MACHINES — Selection includes brochures on Unwind Stand, Automatic Guiding Unit, Jet Mixer, Selvage Trimming, Clothroom Machinery. — HERMAS MACHINE CO., Hawthorne, N. J.

615. HIGH PRODUCTION EXTRACTOR FOR RAW STOCK—YARN—HOSIERY — Descriptive bulletin and full information on automatic Twintainer Extractor with bottom-unloading removable baskets. Machine replaces three conventional extractors, lowers labor costs. — FLETCHER WORKS, INC., Philadelphia, Pa.

617. AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING — Illustrated folder describes the new method of controlling the temperature, pressure, and liquid level in the continuous bleach operation. — TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

618. APPLICATION OF FUGITIVE DYES — Bulletin describes UNITINT operation, giving advantages of effectively controlling the application of fugitive dyes to various fibers. — W. D. DODENHOFF COMPANY, 745 Lowndes Hill Rd., Greenville, S. C.

619. PENFORD FINISHING GUMS — Booklet by Penick & Ford gives complete data, including physical properties and results which may be expected on Penford gums. — PENICK & FORD, Ltd., 420 Lexington Ave., New York 17, N. Y.

620. REGENERATION OF ZEOLITE WATER SOFTENERS — Booklet explains advantages of International's Linaze Process in regeneration of zeolite water softeners. Shows how it cuts costs and does a better job. — INTERNATIONAL SALT COMPANY, INC., Scranton, Pennsylvania.

621. "DYEING SYNTHETIC FIBERS" — Brochure giving a comprehensive, detailed analysis of the methods and materials available for dyeing synthetic fibers. — GENERAL DYESTUFF CO., 435 Hudson St., New York 14, N. Y.

627. SINGLE APRON STOCK DRYERS — Folder presenting the latest idea in automatic drying which every mill having drying problems can profitably use to meet modern manufacturing conditions. — C. G. SARGENT'S SONS CORP., Graniteville, Mass.

628. TREATMENT OF SYNTHETIC TEXTILE FINISHES — High speed drying and curing of synthetic finishes by means of far-infrared radiation is covered in a new 22 page folder entitled "The Textile Report" by Edwin L. Wiegand Company, 7700 Thomas Blvd., Pittsburgh 8, Pa.

630. COMPLETE NAPTHOL MANUAL — Practical working handbook, 110 pages, on textile dyeing and printing applications of Napthols. Write on company letterhead to PFISTER CHEMICAL WORKS, Box 326, Ridgefield, N. J.

631. ELIMINATE DYE-BATH SHOCK — Data sheet by Foxboro shows how woven fabrics and hosiery may be protected from Crow's-feet, uneven shade, creasing caused by too rapid cooling of goods.—FOXBORO COMPANY, 487 Neponset Ave., Foxboro, Mass.

632. LUG STRAP WASHERS — Series 1-C illustrated bulletin detailing right and wrong application and use of washers. — E. H. JACOBS NORTHERN DIV., Danielson, Conn.

636. NAPPERS FOR TREATING ANY FABRICS — Bulletin gives complete details on the Muller Tri-Napping Machine with 24, 30, or 36 rollers. Dimensions and weights included. — FRANZ MULLER, M. Gladbach, Germany.

637. BALL BEARING TURN TABLE — Leaflet describing this 48 inch diameter steel turn table for use in mills where the cloth is delivered in rope form to trucks and the trucks are placed in position ahead of a Scutcher or cloth opening machine. Advantages discussed. — BIRCH BROTHERS, INC., 32 Kent St., Somerville, Mass.

639. ROTARY DYEING MACHINE — Booklet No. 425 illustrating the features of these stainless steel machines used for dyeing hosiery, hats, gloves, socks, etc. — SMITH, DRUM & CO., Allegheny Ave. at 5th St., Philadelphia 33, Pa.

642. SELVAGE OR BACK MARKING MACHINE —Complete specifications and performance data on a new fully automatic marking machine available from Kaumagraph. — KAUMAGRAPH CO., Wilmington 99, Delaware.

643. SURFACE-ACTIVE AGENT — Bulletin gives characteristic properties, suggested applications, etc. of the Nonionic Octylphenoxyethanol Triton Surface-Active Agents. — ROHM & HAAS CO., SPECIAL PRODUCTS DEPT., Philadelphia 5, Pa.

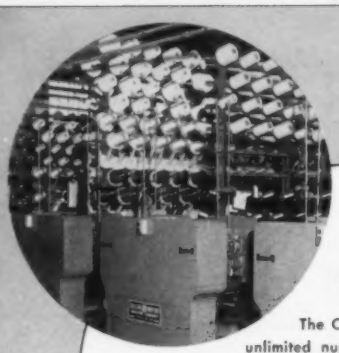
644. DYEING, BLEACHING, FINISHING BULLETINS — Saturator for roped goods, J-Box (for Becco process), J-Box (for duPont Process), Continuous Bleaching Ranges, Carrier Reels, Drum-Type Plaiter are available from WIESNER-RAPP CO., INC., 1600 Seneca Street, Buffalo 10, New York.

645. HYCAR LATICES IN TEXTILES. New 16-page service bulletin features a chart showing the physical properties of the Hycar latices and typical fields of application for each. Write — ADVERTISING DEPARTMENT, B. F. GOODRICH CHEMICAL CO., 324 Rose Bldg., Cleveland 15, Ohio.

647. CURING OVEN. Bulletin gives details of modern, highly efficient, gas-fired curing oven for handling resin-treated fabrics. Shows outstanding features and enumerates advantages. Write — JAMES HUNTER MACHINE CO., North Adams, Mass.

653. GUIDERS AND TENSION DEVICES — Illustrated and described are the Mount Hope Precision Guiders and open width Tension Devices used for accurate, straight line guiding of open width goods. Bulletin SG-PG. — MOUNT HOPE MACHINERY CO., Fifteen Fifth St., Taunton, Mass.

659. SONOCO TUBES FOR PACKAGE DYEING — Color bulletin describes Sonoco's DYTEX tubes for one-time use in standard package dyeing equipment to achieve uniformity. — SONOCO PRODUCTS CO., Hartsville, S. C.



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The Collins Novelty Twister will produce an unlimited number of novelty yarn constructions — from all types of yarns — from the finest to the coarsest counts. This twister has long been the undisputed leader in the novelty field, and such improvements as the exclusive 7-speed Ultrohead with reversing attachment, and the Dual-Drive which allows each side of the frame to be run independently of the other in regard to speed, twist direction, and yarn construction, make this Collins Novelty Twister the ideal for novelty yarn mills.

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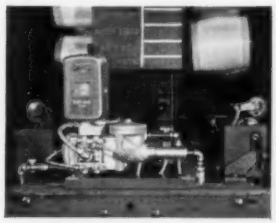

Of course, this eliminates the costs of man-power and machine down-time for hand oiling. Equally important, it eliminates the hidden costs of hand oiling...yarn spoilage caused by oil dripping from over-lubricated bearings... and excessive wear resulting from inadequate lubrication.

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701. MAGNESIUM APPLICATIONS — Case history information on magnesium application in the textile field, published bi-monthly with latest developments in the magnesium industry. — DOW CHEMICAL CO., Midland, Mich.

704. FUNDAMENTALS OF INDUSTRIAL WATER TREATMENT PROCESSES — 24-page booklet entitled "If You Use Water" discusses the fundamentals of the three major classifications of industrial water treatment based on ion exchange: softening, dealkalization, and deionization. — ROHM & HAAS COMPAN'', RESINOUS PRODUCTS DIV., Washington Square, Philadelphia 5, Pa.

705. THEORETICAL AND APPLIED SILK-SOAKING — Attractive twenty-three page booklet outlining methods of silk-soaking and outlining investigation on the soaking, backwinding and degumming of silk. — HART PRODUCTS CORP., 1440 Broadway, New York 18, N. Y.

707. BRINE FOR TEXTILE INDUSTRY — 32-page booklet on the Lizate Process replaces former booklet on making brine that has been a standard reference for years. Contains much more technical information. — INTERNATIONAL SALT CO., INC., Scranton, Pa.

710. DEPUMA — An odorless, viscous, non-evaporating emulsion which is highly efficient as an anti-foam, useful in all phases of dyeing and printing. — AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

712. CATALYST AC-6 — Booklet describes how Catalyst AC-6 steps up curing efficiency as much as 25%. Free eight-ounce botttle upon request. — MONSANTO CHEMICAL COMPANY, PLASTIC DIVISION, DEPT. T1-3, Springfield 2, Mass.

714. NEW SODA ASH BULLETIN — 64-page edition contains both new material and revisions of previously used data covering the subject. — SOLVAY SALES DIV., 40 Rector St., New York 6, N. Y.

715. AQUAROL AND ARKANSAS PRODUCTS — Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn, hosiery processing. — ARKANSAS CO., INC., Newark, N. J.

719. WOOL OIL — Descriptive booklet on antistatic fiber lubricant, Twitchell 7421. Performance factors given particular emphasis are static control, scourability, lubricity and resistance to yellowing. — EMERY INDUSTRIES, INC., DEPT. 5, Carew Tower, Cincinnati 2, Ohio.

720. INDUSTRIAL OIL — Bulletin catalogs all of Swift's Industrial Oil and Fatty Acid products. Included are detailed specifications, shipping information and suggested usage on products of animal, vegetable and marine sources. — SWIFT & COMPANY, INDUSTRIAL OIL DEPARTMENT, 1800 165th Street, Hammond, Indiana.

722. RESINS & LATICES — Booklet describes chemigum, latex, pliolite latex, plivoia latex, pliovic AO and their applications. Gives properties of Goodyear Latices. — GOODYEAR CHEMICAL DIV., 1144 East Market St., Akron 16, Ohio.

723. CHEMICAL CATALOG — Features detergents, wetting agents, emulsifiers, brighteners, sequestrants, dyeing assistants with chemical composition, properties and application.—ANTARA CHEMICALS DIV., GENERAL ANILINE & FILM CORP., 435 Hudson St., New York 14, N. Y.

724. WICA CHEMICAL BULLETINS — Bulletins describe in technical terms the various Wica Products for textiles. Issued each month for the benefit of industry, they are an excellent help in wet processing. To get on the mailing list write WICA CHEMICALS, INC., P. O. Box 506, Charlotte, N. C.

726. CELANESE ORGANIC CHEMICALS—Booklet gives complete technical details on Celanese organic cehmicals including uses and descriptive data. Useful addenda to files.—CELANESE CORPORATION, CHEMICAL DIVISION, 180 Madison Ave., New York 16, N. Y.

727. COLOR PRINCIPLES — Booklet available from Sandoz Chemical describes the fundamental principles of color and its measurement. Booklet has been adopted by several of the leading textile schools. — SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y.

729. STATIC AND STATIC CONTROL — Papers deal with historical background of static electricity and the problems caused by it along with methods of controlling them. — DEXTER CHEMICAL CORP., 819 Edgewater Road, New York 59, N. Y.

733. WOOL OILS — Twin booklets by Proctor and Gamble tell of the influence of wool oils in producing quality yarns and fabrics, and of Proctor and Gamble's Proxol T, an outstanding wool oil. — PROCTOR AND GAMBLE DIST. CO., Cincinnati, Ohio.

734. BLEACHING WITH PEROXYGEN CHEMICALS — Bleaching methods for cotton, rayon, nylon and animal fibers are comprehensively treated in Becco Research and Development Dept., Bulletin No. 52, now available. — BUFFALO ELECTROCHEMICAL CO., INC., Station B, Buffalo 7, New York.

745. RAPIDASE FOR DESIZING — Bulletin explaining in detail the properties and characteristics of Rapidase. — WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

746. INDUSTRIAL CHEMICALS — 24-page booklet listing alphabetically Harshaw industrial chemicals and applications. — THE HARSHAW CHEMICAL COMPANY, 1945 East 97th Street, Cleveland, Ohio.

747. CATIONIC SURFACE ACTIVE AGENT — Technical bulletin describes Harshaw's UVERSOFT "D" which produces full, soft hand while acting as an outstanding anti-static agent. — HARSHAW CHEMICAL CO., 1945 East 97th St., Cleveland 6, Ohio.

748. CHEMICALS, DYES AND INTERMEDIATES — Complete file of bulletins available on Metro-Atlantic products. Covers wide range. Write for product resume showing bulletins offered to METRO-ATLANTIC, INC., Centredale 11, R. I.

753. TRITON X-100 — Booklet available describing this highly concentrated detergent and wetting agent. Main uses fully discussed and chemical properties brought out. — ROHM & HAAS COMPANY, Philadelphia 5, Pa.

757. THE CHEMISTRY OF CYNANURIC CHLORIDE — Very comprehensive technical text by American Cyanamid Co. Gives physical properties, reaction chart. Chemical properties, potential applications, toxicity, table of alcohol reactions, table of amine and related compound reactions. — AMERICAN CYANAMID CO., 30 Rockefeller Plaza, New York 20, New York.

766. DU PONT PEROXIDE BLEACHING SYSTEMS — New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included. — E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

769. SURFACE TENSION DEPRESSANT — The Booklet, "Mercerizing and Alkamerce — The Ideal Dry" which can be used as a wetting agent; a dye leveling agent, a penetrant in package dyeing. — HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

774. ROYCE TEXTILE CHEMICALS — This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing. — ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

775. ETHANOLAMINES — Book describes monoethanolamine, diethanolamine, and triethanolamine, listing their applications, chemical and physical properties, physiological properties, etc. — NITROGEN DIVISION, ALLIED CHEMICAL AND DYE CORPORATION, 40 Rector St., Neew York 6, N. Y.

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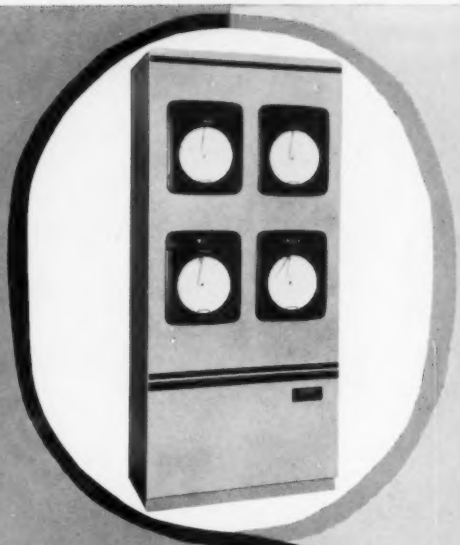

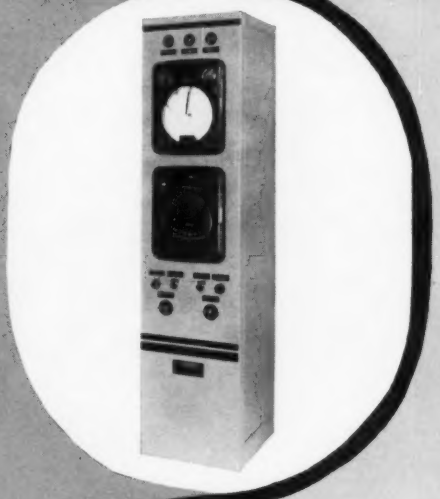

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800. SYNTHANE TEXTILE PARTS — Folder on laminated bobbins, pirns, headless package tubes, hosiery turning and examining forms, sizing bobbins, etc. — SYNTHANE CORP., 9 River Road, Oaks, Pa.

801. THE WILDMAN SINGLEHEAD FULL-FASHIONED HOSIERY MACHINE — Literature on request from the WILDMAN MFG. CO., FULL FASHIONED DIVISION, Norristown, Pa.

803. TIPS ON SEAMING NYLON STRETCH HOSIERY — Pamphlet lists in detail observations and suggestions on seaming nylon stretch hosiery prepared by Union Special as a result of findings of engineers in the field. — UNION SPECIAL MACHINE CO., 407 N. Franklin St., Chicago 10, Ill.

804. BOOKLETS ON FIDELITY MACHINES — Following booklets available: Fidelity "400". Fidelity Multi-Design Ribber, Fidelity Skein Reelers. — FIDELITY MACHINE CO., 3908-18 Frankford Ave., Philadelphia 24, Pa.

809. REINER WARPER — Full width and sectional warpers for all requirements in the knitting and weaving industry fully described in recent catalog. — ROBERT REINER, INC., Weehawken, N. J.

818. FORGED HEAD ALUMINUM BEAMS — Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum tricot and section beams. — MILTON MACHINE WORKS, INC., Milton, Pa.

823. THE KIDDE KNITTER — Bulletin describing this newest in Raschel-type warp knitting machines and higher production attained with it. — KIDDE MANUFACTURING CO., INC., Farrand St., Bloomfield, N. J.

SEWING MACHINES . . .

824. BUTT-TACKING SEWING MACHINE — Booklet describes an operating installation of the Merrow single thread butt-tacking sewing machine. Gives performance data, and advantages of butt-tacking. — THE MERROW MACHINE COMPANY, 28 Laurel Street, Hartford, Connecticut.

MATERIALS HANDLING . . .

1003. CASTERS AND WHEELS — 192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this. — DARNELL CORP., LTD., Long Beach 4, Calif.

1005. LANE CANVAS BASKETS — 16-page illustrated booklet describing the Lane line of canvas baskets for textile use. — W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. OVERHEAD HANDLING EQUIPMENT — 56 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem.—THE AMERICAN MONORAIL CO., 13106 Athens Ave., Cleveland 7, Ohio.

1008. CASTERS AND WHEELS — An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters. — THE COLSON CORP., Elyria, Ohio.

1009. HOW TO TEST CORRUGATED BOXES — 24-page booklet offers a comprehensive check-list by which to judge the protective qualities and durability of specific corrugated boxes. — HINDE AND DAUCH, Sandusky, Ohio.

1010. CONVEYOR KEY BOOK — A guide to production "step-ups" now possible with modern conveying. Shows time-and-effort savings. Well illustrated with photos showing plant layouts and sketches showing where, how and why different types of conveyors are used for maximum results.—LOGAN CO., 1115 Franklin St., Louisville, Ky.

1015. OVERHEAD MATERIALS HANDLING — Three booklets available from Louden Machinery Co. treat economical material handling, twin fan ceiling cleaners, and shock proof electrification. — LOUDEN MACHINERY CO., Fairfield, Iowa.

1018. BALL BEARING TROLLEYS — 20 page catalog by Link Belt describes entirely new line of ball bearing trolleys for overhead conveyors. Contains pictures, specifications charts and diagrams. — LINK-BELT CO., 307 North Michigan Ave., Chicago 1, Illinois.

1019. HOW TO SELECT A LIFT TRUCK — An equipment analysis guide and rating table has been introduced by Hyster for comparison and selection of fork lift trucks. Gives an excellent means for price comparison between trucks of a similar nature. — HYSTER CO., 2902 N. E. Clackamas St., Portland 8, Oregon.

1021. CORRUGATED CONTAINERS — Brochure by Gaylord describes Multi-Unit and Bulk Containers which have been adapted for the textile field. — GAYLORD CONTAINER CORP., 111 N. 4th St., St. Louis 2, Mo.

1022. INDUSTRIAL TRACK EQUIPMENT — Color booklet describes SAFE-RAIL track developed as a supplement to the ZIG-ZAG power conveyor. Complete engineering data included. — RICHARDS-WILCOX MFG. CO., Aurora, Ill.

1030. CDF RECEPTACLES — This 32-page catalog, B-11, profusely illustrated in color, shows Continental-Diamond's line of boxes, trucks, cans, barrels, baskets and trays. Complete description and specifications are given on each item. — CONTINENTAL-DIAMOND FIBRE CO., Newark 11, Del.

1033. STRESSES ON OVERHEAD TRACKS — Booklet describes in detail stresses developed in various type tracks used for overhead materials handling systems. Track peening also covered. — CLEVELAND TRAMRAIL DIV., Wickliffe, Ohio.

MISCELLANEOUS . . .

1102. BALING PRESSES — An illustrated folder describing this manufacturer's complete line of balers for all materials. Both downstroke and upstroke models. —ECONOMY BALER CO., Ann Arbor, Mich.

1103. UNBRAKO SCREWS — Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Includes miscellaneous screw and locking nut data. — STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1105. SHADOGRAPH WEIGHING DEVICES — Bulletins describe scales for weighing dyestuffs, cotton samples, wool yarn, cones of yarn. Pictures and complete information on each type of scale included. — EXACT WEIGHT SCALE CO., Columbus 8, Ohio.

1111. BRUSHES — A 26-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry. —GASTONIA BRUSH COMPANY, Gastonia, N. C.

1112. THE RANDOM WEB PROCESS — Bulletin No. 101 describes the Rando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cut-away diagrams. — CURLATOR CORPORATION, TEXTILE DIVISION, 501 W. Commercial St., East Rochester, N. Y.

1113. MACHINE KNIVES — Catalog and price sheets describing this company's line of knives for use on textile machinery. — TAYLOR-STILES & CO., 21 Bridge St., Riegelsville, N. J.

1115. TEXTILE WRAPPING MACHINES — Brochure describing automatic wrapping machines for various types of textile products, including the new Hayssen V-Type Underfold, most protective package made. — HAYSSEN MANUFACTURING CO., Sheboygan, Wisconsin.

1122. BALING PRESSES — Bulletins available describing this company's line of motor-driven and hydraulic baling presses for finished-goods, textile fibers, wool, and waste of all kinds. — LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wisconsin.

Have you an Ozone-Fading Problem?

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Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 46)

president of the National Association of Wool Manufacturers during the organization's annual meeting last month. **Arthur O. Wellman** of Nichols & Co., Inc., Boston, Mass., was named a vice-president.

Anthony Rzucidlo, formerly second hand of picking, is now overseer of picking at Brampton Woolen Mills, Newport, N. H.

Promoted from plant superintendent to manager of the Lynchburg (Va.) division of Consolidated Textile Co. is **P. S. Leach** who succeeds the late Henry B. Miller.

Dr. William F. Luther has resigned as director of research at Dixie Mercerizing Co. and head of the textile division of the industrial research

Mr. Luther

institute of the University of Chattanooga (Tenn.) to become technical director of the Marler Chemical Co., Cleveland, Tenn.

E. A. Maddox, formerly overseer of weaving, is now superintendent of Lakeside Mills, Inc., Guntersville, Ala.

S. Paul Meadows, formerly associated with Hanes Dye and Finishing Co., Winston-Salem, N. C., has joined

Mr. Meadows

Roanoke Mills, Inc., Roanoke, N. C., as head of standards and time study department.

Walter J. Gladwin, formerly associated with Amoskeag-Lawrence Mills, Manchester, N. H., is now superintendent of Ace Woolen Mills, Cleveland, Ohio.

Lloyd Goodwin, formerly with the Wood Mill of American Woolen Co. and Arlington Mills, Lawrence, Mass., is now boss carder of the newly organized General Spinning Corp., Lowell, Mass.

Thomas A. Quigley, who has been head of the industrial education department at Georgia Institute of Technology since 1926, was elected an

Mr. Quigley

honorary member of Delta Kappa Phi textile fraternity at the fraternity's annual convention in Atlanta.

Thomas H. McGowan was recently elected a vice-president of Wyandotte Worsted Co., Waterville, Maine. At the same time **Arthur C. McGowan, Jr.,** was named secretary and assistant treasurer, and **Ezra A. McEwen** was appointed a director and assistant general manager.

As a tribute to a long and distinguished career of service in the interest of textile research and education, **Edward T. Pickard** was honored during Textile Research Institute's 26th annual meeting in New York by the Institute's trustees' designation of the new meeting hall at Princeton, N. J., as "The Edward T. Pickard Seminar Room."

Carl C. Pritchard, industrial engineer with Collins & Aikman Corp., Siler City, N. C., was named by the local Jaycees as Siler City's "Young Man of the Year."

At Merrimac Manufacturing Co., Lowell, Mass., **John A. Wilson** has stepped up from board chairman to president, succeeding **Arnold Chase,**

who became treasurer. **L. Frank Fayan** has been elected general superintendent and assistant to the president.

Maurice San Souci has been named president of Norwalk (Conn.) Dyeing & Finishing Corp., and **William O. Traumuller,** secretary and treasurer.

Newly appointed plant manager at Cone Mills Corp., Florence Division, Greenville, S. C., is **Earle R. Stall, Jr.,** formerly assistant plant manager. He succeeds Walter W. Rodgers.

Officers elected by Textile Research Institute at the recent annual meeting are: president, **Sydney M. Cone, Jr.,** vice-president, Cone Mills Corp., Greensboro, N. C. (re-elected); vice-president, **Walter Regnery,** vice-president, Joanna Cotton Mills Co., Joanna, S. C.; treasurer, **William E. Clark,** vice-president and general manager, textile division, U. S. Rubber Co., New York, N. Y.

Kurt Trueb has been appointed vice-president in charge of weaving operations of The Schwarzenbach Huber Co., New York, N. Y., replacing **Robert E. Zoelly** who is returning

Mr. Trueb

to Switzerland to become chief engineer of Linoleum A. G. Giubiasco. Now serving as manager of the company's Luray Textile Division, which was also the responsibility of Mr. Zoelly, is **Michael F. Kopec.**

L. H. Jordan, formerly manager of Kendall Cotton Mills' Edgefield, S. C., Addison plant, is now manager of Kendall's newly acquired plant at Albertville, Ala. He was succeeded at Edgefield by **J. N. Jenkins,** formerly superintendent of the Kendall upper plant at Pelzer, S. C. **Jack Harris** replaces Mr. Jenkins, having been promoted from assistant to the manager at Pelzer.

Malden Mills, Inc. has named **Dr. Daniel Frishman** director of research and development. In the newly created position Dr. Frishman will direct the program for the development of new fabrics, production techniques, and color ranges.

At the recent annual meeting of the stockholders of Standard Knitting Mills, Inc., Knoxville, Tenn., officers were elected as follows: **E. J. McMillan,** chairman of the board; **E. J. Ashe,** president and general manager; **H. B. Mebane, Jr.,** first vice-president; **H. W. Walker,** vice-president in charge of the New York sales office; **J. B. Woolsey,** secretary and treasurer; **Mrs. M. C. Chrisman,** assistant secretary and treasurer.

J. H. May, formerly resident manager of the Cranston division, Cranston (R. I.) Print Works, is now assistant general manager of the company. Douglas Martland is new resident manager of the Cranston division, and James Murray is superintendent.

Obituaries

N. Myers Fitler, 77, retired chairman of the board of Edwin H. Fitler Co.

William E. Hammond, 81, retired superintendent of Balfour (N. C.) Mills.

Frank F. Herrmann, 69, chief engineer of Hellwig Dyeing Co., Philadelphia, Pa.

Oliver King Jones, 76, president of Sweetwater (Tenn.) Hosiery Mills.

Jacques Lapoutre, president of Verdun Manufacturing Co., Woonsocket, R. I.

Abe Louis, 91, vice-president of Atlas Underwear Co., Piqua, Ohio.

Henry B. Miller, retired manager of Lynchburg, Va., division, Consolidated Textile Co.

J. Charles Nice, Jr., former owner and president of Nice Yarn Co., Wakefield, R. I.

Oscar Shapiro, production man and yarn buyer of Regal Knitwear Co., Inc., New York, N. Y.

J. S. Verlenden, 77, retired former president and chairman of Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

Ben M. Williams, 73, manager of sales promotion for Gaylord Container Corporation, division of Crown Zellerbach Corp.

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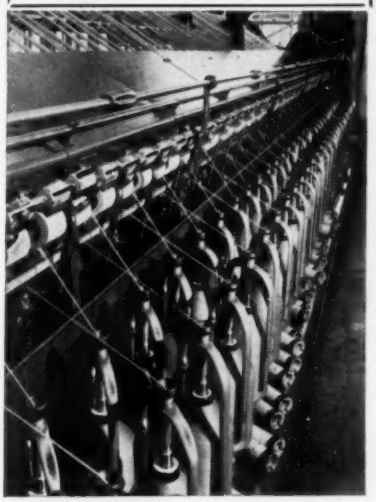

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ROVING PRETWISTERS*

The two design HALO TWIST CONDENSER gives maximum pretwisting and uniformity of twist on all flyers. One design fits on the front flyers and one fits on the back.

Condensers fit snugly on the flyer and are made of synthetic rubber so as not to be affected by oils on fibers.

In extensive tests actually in the mills, it has been proved that the HALO TWIST CONDENSER effects the following conditions: less ends down, less waste, heavier bobbins, more uniform yarn, up to 20% higher production, and lower costs.

Write for details today. Orders will be filled in one to ten days.

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Tillicum

RUBBER COMPANY
LACEY WASHINGTON

What the TEXTILE MILLS are doing

A two-ply mercerized cotton yarn which "has the feel of wool and exceptional wearing qualities" is reported to have been developed by **Aberfoyle Manufacturing Co.,** Philadelphia, Pa. Developed especially for the knitting trade, the new yarn is described as having an exceptionally soft hand and texture, high absorbency qualities, and a "rare ability" to take dyes.

Woolen and worsted spinning machinery and equipment at **Botany Mills,** Passaic, N. J., have been purchased by a textile machinery dealer, to be offered at private sale. * * * The tract of land at Southern Pines, N. C., which was acquired by Botany some time ago, has been sold to an individual.

The **Binghamton (N. Y.) Knitting Co., Inc.,** has purchased the **H O W Knitting Mills,** New Britain, Conn. All trade names, patents, equipment, good will, and sales agencies were included in the transaction. Equipment was moved from New Britain to the Binghamton plant.

The establishment of seven additional scholarships, valued at $1,000 each, at church-related and privately endowed colleges and universities was announced recently by the **Burlington Industries** Foundation. Schools where new scholarships will be awarded for the 1956-57 year are Washington & Lee, Davidson, Duke, Wake Forest, Lowell Technological Institute, Philadelphia Textile Institute, and Virginia Polytechnic Institute. In addition to scholarships, the Foundation will provide matching grants in identical amounts to schools where the scholarships are utilized.

The DODENHOFF Hydraulic Checkmaster*

Greatly Improves Loom Performance

- Positive, constant, and accurate check of shuttle on every pick. Checks power stroke, too, reducing bumper wear.
- Cuts weaver's and loom fixer's work load.
- Permits increase in loom speed.
- Stops kinky fillings and produces even selvage.
- Solves Monday morning start-up troubles.

Try the Dodenhoff Hydraulic Checkmaster on your looms and check the improvement.

*Pat's. Pending and Applied For

W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

Chicopee Manufacturing Corp. has been licensed by **Bates Manufacturing Co.,** Lewiston, Maine, to produce and sell the three dimensional fabrics on which Bates obtained a patent last year.

The present offices at the **Cranston Print Works** plant in Fletcher, N. C., will be utilized for manufacturing and storage when the 8,000 sq ft addition to the plant, which is now under construction, is completed.

When a 15,000 sq ft addition to the plant facilities of **Carolyn Chenilles Corp.,** Saluda, S. C., has been completed, the company will be able to double its present 48-loom operation.

Cadillac Hosiery Mills, Ltd., Montreal, Quebec, Canada, is now owned by **Avalon Hosiery Mills, Ltd.,** also of Montreal. Production of its own branded lines of 60- and 51-gauge hosiery is to be continued at Cadillac, with marketing to be handled by Avalon. * * * About forty seamless hosiery machines have been installed by Avalon, doubling the firm's capacity for the product.

With the installation of 105 looms, which came from the Revolution plant of **Cone Mills Corp.** in Greensboro, N. C., production in the Haynes plant in Avondale, N. C., has been increased by about 18 per cent. There are now 705 looms in the Haynes plant which produces corduroy.

Production of about ten thousand pounds of piece goods weekly is planned by **Dalnoca Dye Works, Inc.,** Dallas, N. C. Dalnoca is a new concern occupying the building previously utilized by Dallas Mills. Jerry W. Walker is president of the corporation; Harry H. Sweetbaum, vice-president; Mrs. Viola P. Johnson, secretary; and D. E. Walker, treasurer.

The Duffy Silk Co., Buffalo, N. Y., is now being operated by Hemmerich Corp., a new concern headed by Paul Hemmerich who has been executive vice-president of Duffy Silk for the last twelve years.

A ten-hour safety and accident prevention course was recently completed by all supervisory personnel of the Cooleemee, N. C., plants of **Erwin Mills, Inc.** Plans are to present the course at all of the company's plants.

Faith Mills, Inc., Averill Park, N. Y., is now owned by **Flagg-Utica Corp.** Manufacture of underwear at

Averill Park is to be continued, with the name of the mill changed to Faith Mills Corp., a Flagg-Utica subsidiary. Arthur M. Butler, formerly vice-president and general manager of the mill, is president and director of the new corporation.

The Sock Pak carton pictured in the accompanying illustration won first prize for best lithographic printing and a merit award in the textiles and wearing apparel classification for its manufacturer, the Lord Baltimore Press. Created for **Spinnerin Yarn Co., Inc.,** Hackensack, N. J., the five-color folding carton, makes a home knitting box as well as a container for enough yarn to knit a full length pair of men's socks in a choice of patterns and color combinations.

Gallet Knitting Mills, Inc., Uniontown, Pa., is now owned by Forstmann Woolen Co., Passaic, N. J. Full-fashioned sweaters manufactured in the Uniontown plant will augment Forstmann's line of men's and women's sweaters.

Two new 15-inch carpet machines are being installed at the Dalton, Ga., plant of **Gold & Co.** Also, a 15,000 sq ft addition to existing mill facilities is now under construction.

Production of combed yarn is planned for the No. 1 plant of **Highland Park Manufacturing Co.,** Charlotte, N. C. Twelve combers and complementary equipment for the conversion have been purchased; also twelve spinning frames, containing 3,120 spindles.

Installation of six "Tek-ja" (no-twist) spinning frames to augment its 25,000 lb weekly production of sales yarn is planned by **Javian Yarn Manufacturing Corp.,** Fall River, Mass.

Acting upon a recommendation of the directors of **Lillian Knitting Mills Co.,** Albemarle, N. C., stockholders recently approved a resolution calling for complete liquidation of the mill within the next twelve months. A. L. Patterson, treasurer and general manager of the plant, said: "For the best interest of all concerned, it is hoped that the complete plant may be sold as a going concern and operated with some additional modern knitting machines, without a shutdown."

Julia Cade Mills, Inc., Albertville, Ala., is now owned by **Kendall Cotton Mills,** Charlotte, N. C., a division of The Kendall Co. Operation of the plant continues without interruption.

As a climax to the public inspection of the **Pine Tree Co.,** Dahlonega, Ga., President Joseph L. Eastwick announced that the size of the wholly-owned subsidiary of **James Lees and Sons Co.** will be doubled this year. It is expected that work on the addition will begin by mid-summer. * * * A new tufted carpet mill is to be constructed on land purchased in Rabun County, near Clayton, Ga., by Lees. It will operate under the name of **Rabun Mills, Inc.,** a recently organized Lees' subsidiary. * * * Plans to close and liquidate its worsted yarn division have been announced by Lees. The decision will affect approximately 275 employees, the discontinuance to be accomplished in the next few months when existing orders have been completed. Employees whose jobs are being terminated will receive separation and vacation payments. In explaining the action, Mr. Eastwick told the operatives that the worsted operation continued to be unprofitable despite a modernization of plant and equipment five years ago.

More new seamless hosiery machines are being installed at **Magnet Mills,** Clinton, Tenn., and it is expected that by the end of 1956 there will be about 1,000 employees on the payroll of this mill.

Operation of **Metro Dyeing and Finishing Co.** of New York City has been discontinued. Plans call for liquidation.

Changeovers for 23,000 spindles of spinning and three new 10"x5" roving frames have been purchased for

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What the TEXTILE MILLS are doing

installation at **Park Yarn Mills Co.**, Kings Mountain, N. C. * * * At **Eastern Manufacturing Co.**, Selma, N. C., a 2,000 sq ft addition is being constructed to house a new cooling system.

Scheduled for completion on July 1, 1956, is a new 44,000 sq ft knit goods finishing plant in Cleveland, Ohio, by **Phoenix Dye Works** of Chicago, Ill. Provision for a $100,000 laboratory for developing new dyeing techniques for synthetics is included in the new facility.

The building and equipment of **Sands Knitting Mills Corp.**, Berlin, Wis., were completely destroyed recently by a tornado which swept through the Green Lake area of Wisconsin. Reconstruction of the mill is planned, according to the announcement.

Mount Vernon Mills, Inc. is the new name of Mount Vernon-Woodberry Mills, Inc., Baltimore, Md.

Well-lighted braider room at Providence Braid Co.

The prize-winning certified lighting installation pictured in the accompanying illustration is in the plant of **Providence Braid Co.**, Pawtucket, R. I. It consists of 12 rows of "Eastern" single lamp troffers with a total connected load of 11,880 watts. Spacing is 7 ft between rows and mounting height is 9 ft. Light intensity of 40 footcandles is maintained at the machines to increase efficiency of the braiding operation. New England Machine and Electric Co. of Pawtucket won first prize for this installation in a recent certified lighting competition sponsored by the Electrical League of Rhode Island.

Profile Cotton Mills, Jacksonville, Ala., have been purchased by **Union Underwear Co.** Extensive remodeling and installation of modern combing and spinning machinery are now taking place at the Jacksonville plant, which will be incorporated as **Union Yarn Mills, Inc.** Scheduled for full operation by fall, under the supervision of production manager Henry Miller, the plant's complete output will be consumed by Union's Campbellsville, Ky., knit underwear mill.

Herman Litchman of Artex Hosiery Mills, Boyertown, Pa., recently sold the **Spun-Gold Hosiery Co.** to Sklaroff Brothers of Philadelphia, who have incorporated it into their organization for diversification purposes.

William H. Entwistle, Jr., treasurer and vice-president of **Sandhurst Mills, Inc.**, Rockingham, N. C., recently announced that his company would build a 3,000 sq ft plant addition to provide for expanded production of ladies' full-fashioned hosiery.

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Add up your monthly bills for rotating steam joints and you'll get an annual total that "ain't hay."
Compare ROTARY UNION performance with that of any other joint and you will find that your savings through longer service and reduced maintenance "ain't hay" either. It will pay you to contact our nearest office or write for Bulletin 700 today.
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As soon as unfilled orders have been completed, the **Waterville (N. Y.) Textile Mills, Inc.,** will cease operations. It is expected that the mill will close the latter part of June.

Troy (N. H.) Blanket Mills expects to have completed by mid-summer a 13,000 sq ft addition to the jute felt department.

A new 16,000 sq ft addition is under construction at the Liberty, S. C., plant of **Woodside Mills.** 12,800 sq ft of this two-story building, which will fill the gap between the two existing buildings, will be used for additional spinning required for conversion of the plant from production of print cloth to combed goods. The remainder of the space will be utilized for offices and a canteen.

Soon to be completed at **Wehadkee Yarn Mills,** Talladega, Ala., is a $90,000 addition.

SUPPLIERS *News*

WHAT THEY ARE DOING

American Viscose Corp. has enlarged its college relations program to include ten more grants for the academic year 1956-57. This aid, in the form of fellowships, scholarships, grants-in-aid, and assistance to educational foundations, will benefit advanced education. Twenty-three scholarships have been awarded to undergraduates who are majoring in textiles, chemistry, physics, engineering and business administration. Seven grants-in-aid have been established to cover textile research, industrial medical research, and food technology. * * * Thomas O. Williams is manager of the newly-created customer and sales service department of the film division. Succeeding Mr. Williams as New York district sales manager for Avisco cellophane is Virgil N. Winkler, former manager of the sales order section at Fredericksburg, Va.

The Bahnson Co. has appointed R. F. Makepeace as New England representative. Mr. Makepeace resides at 9 Rhode Island Ave., Warwick Neck, R. I.

Maher Color & Chemical Company has moved to a more spacious building in Chicago, Ill., to accommodate larger laboratories, offices, and new equipment, and also to facilitate service to its customers. The address

is 1700 North Elston Ave., Chicago 22, Ill. * * * Jean C. LaVey is now a director and executive vice-president of the firm, having come to Maher from Oscar Heineman Corp.

(Continued next page)

It's Here! **The New**

Wicaco Spindle Oiling Machine

The all-new Wicaco Spindle Oiling Machine fulfils the popular demand for a more efficient and economical spindle oiler.

IT HAS THESE OUTSTANDING FEATURES

- ★ Smaller than previous models—it can go anywhere a man can walk.
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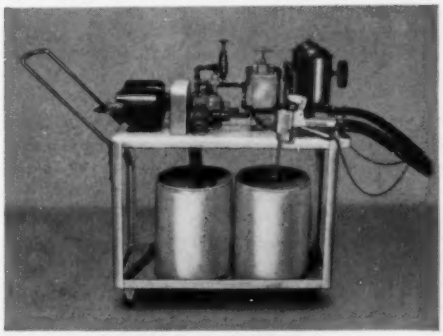
- ★ Economical—lower first cost and inexpensive operation.
- ★ New style, improved filter system cleans old oil for reuse and longer life.
- ★ Greater efficiency—operates with as little as one gallon of oil, filters the old oil and returns it for further use, or flushes out the old oil and replaces it with all new oil.
- ★ Complete flexibility—different oils may be used interchangeably by simply switching oil containers.
- ★ New filter gauge tells when filters need changing.
- ★ Relief valve permits full control of pressure from 0 to 35 lbs.



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SUPPLIERS News
WHAT THEY ARE DOING

Mr. Byers
Whitin

Mr. Patterson
Whitin

Mr. Guill
Keever

Mr. Phillips
Keever

Plans to build a new formaldehyde and synthetic resin plant in Fayetteville, N. C., have been announced by the Chemical Division of the **Borden Co.** In addition to the manufacture of formaldehyde and from it urea resins for the textile industry, among others, the plant will also serve as a warehouse for polyvinyl acetate and polyvinyl alcohol to serve the textile and other industries.

New York district sales manager of the textile fibers department of **Carbide and Carbon Chemicals Co.** is William T. Burgin, succeeding John S. McGilly who is now assistant sales manager of the fibers department. Mr. Burgin formerly was associated with Virginia - Carolina Chemical Corp.

Five sales representatives have been assigned to new territories by the alloy tube division, **The Carpenter Steel Co.** Arvin W. Harrington is now easten regional manager; Harry A. Hauser is mideastern regional manager; Harry L. Harner is a Pacific northwest sales representative residing in San Francisco; Nields B. Haas is now in the division's southeastern territory; and Walter Joyce is serving in the New York and Connecticut areas.

The Felters Co. has elected George C. Howe, vice-president and general sales manager, to its board of directors.

Ferguson Gear Co. has inaugurated in Gastonia, N. C., an electronically controlled heat treating service for gears, said to be the first in the South. Gear life up to four times that of similar gears that are untreated or poorly treated by conventional methods is provided by gears treated by the radiant hardening process employed by Ferguson.

General Electric Co. has completed a modern factory in Schenectady, N. Y., for the manufacture of electric induction motors in the 7½-30 hp range on a mass production basis. The new facility, built at a cost of approximately $7 million, was designed to meet requirements of the rapidly expanding motor market which is expected to be at least 75 per cent higher by 1965.

New sales agents recently appointed by **Whitin Machine Works** are Walton V. Byers and Harry B. Patterson, both with headquarters in Charlotte, N. C., office. Mr. Byers formerly was associated with Erwin Mills, Inc. Mr. Patterson previously was with Highland Park Mfg. Co. and Abbeville Mills, Inc. * * * Recently elevated to the rank of vice-presidents at the Whitinsville, Mass., office were E. Kent Swift, Jr., liaison in engineering and manufacturing, and John H. Bolton, Jr., liaison in sales. Elected treasurer was Gordon G. Spence.

C. Douglas Mercer, formerly president of **Willcox & Gibbs Sewing Machine Co.,** has been elected chairman of the board and is succeeded as president by Norman Wonnacott, previously vice-president and general sales manager.

New western regional sales manager for **The Yale & Towne Manufacturing Co.,** Yale materials handling division, is Garnett A. Vining, formerly manager of Yale gas powered industrial truck sales. With supervisory control of Yale activities in the eleven most western states and northwestern Canada, Mr. Vining will make his headquarters in San Francisco, Calif.

Recent promotions at **The Yale & Towne Manufacturing Co.** include the appointment of Carl O. Hedner as assistant general sales manager of the materials handling division. Fred E. Rau has been named to the newly created post of assistant hoist sales manager. Richard H. Marsh has been elevated to the position of sales manager for the Worksaver and Warehouser industrial truck lines. L. W. Goldenson has been named San Francisco area branch manager.

Ben Purdy has joined the sales staff of the **Harry Miller Corp.** He will contact accounts in the Philadelphia area.

Three new territorial sales assignments for the Southeast have been made by **Keever Starch Co.** R. F. "Bob" Guill now covers eastern North Carolina and Virginia. C. B. Phillips, formerly industrial engineer with Burlington Industries, is traveling out of Greenville as South Carolina representative. Sam S. Rice, Jr., previously with West Point Foundry and Machine Co., is covering parts of Georgia and South Carolina from his headquarters at Anderson, S. C.

William W. Edwards has resigned from the Singer Sewing Machine Co. to form his own consulting firm, **Management Engineers Associated,** P. O. Box 125, Stratford, Conn. The firm will specialize in industrial management techniques for the needle trades.

The **Meadows Manufacturing Co.** has just expanded its plastic facilities. Heretofore, the plastics division specialized in compression molding of high impact products which the company uses in the construction of its textile machinery. Through these new facilities, the company now offers its services to the industrial plants of the South. The new field of plastics which the company has entered covers the reinforced glass fiber polyester and epoxy resins. In addition, Meadows has just been given the exclusive sales rights for the southern territory by Fiberite Corp. of Winona, Minnesota, to use their recently developed, high impact, heat resistant phenolic resin reinforced with glass fiber. W. T. Roose, formerly of Plastics Corp., of Chicago and Foundry Plastics Co., is chief plastics engineer of this department.

Jersey State Chemical Company has appointed H. Russell Haley as sales representative in the North Jersey and Central Pennsylvania area. For the past 16 years he served the same territory for the Onyx Oil & Chemical Co.

Mr. Rice
Keever

Mr. Brown
Emery

Mr. Fulbright
Ciba

Mr. Signorino
Ciba

Mr. Lovin
Celanese

Mr. Stratton
Tyer

Emery Industries, Inc. has replaced its single chemical sales operation with two sales departments—namely organic chemical and fatty acid. The former will be headed by Robert F. Brown, assisted by Robert Hull and Vern Colby. Textile processing oil is one of the non-fatty products marketed by the organic chemical sales department. Manager for the fatty acid sales department is G. William Boyd, formerly sales manager of Emery's Sanitone division.

On March 1 the Carrollton, Ga., division of Testworth Laboratories, Inc., was organized into a new corporation under the name of **Testworth Laboratories of Georgia, Inc.,** this new corporation being a wholly owned subsidiary of the parent company. The Carrollton operation was developed for the purpose of servicing mills in the southeastern states engaged in the manufacture of carpeting, upholstery fabrics, and specialty fabric converting. Ty Cobb, who started originally with the company as the plant manager of the Carrollton division, has been promoted to sales manager for Testworth Laboratories of Georgia, Inc.

The Torrington Co. has purchased the business and assets of the Progressive Manufacturing Co., Torrington, Conn., manufacturer of machine screws, nuts, bolts, rivets and related types of fastners. * * * William C. Wiechardt, formerly manager of the needle division's branch office in Philadelphia, has retired, and his successor is John W. Beaber, previously branch manager.

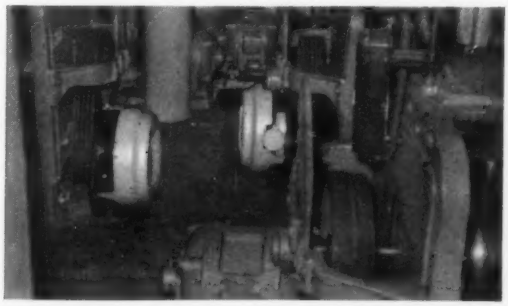
Watdes Corporation has been formed to handle import and export of textile machinery and supplies. Officers include S. P. V. Desmond, president; C. E. Watson, vice-president; J. A. Olwell, secretary and treasurer; and Mrs. Hazel H. Hunter, assistant secretary. Offices are at 218 West Fourth St., Charlotte, N. C.

Ciba Co., Inc. has appointed John W. Fulbright to its Charlotte, N. C., sales force. John G. Signorino recently completed a sales training program and was assigned to Ciba's New England branch. * * * New Ciba technical appointments include John F. Clark and Jack B. Williamson, both as dye technicians at Charlotte.

Celanese Corporation of America has announced the assignment of L. G. Lovin, Jr., to its textile sales development department to direct the development of non-woven and batting sales. In his new capacity, Mr. Lovin will work closely with customers to help broaden uses for non-wovens and battings made from Celanese fibers, alone and in combination with other materials. * * * Louis F. Prossen has been named manager of the manufacturing department, textile division, at Charlotte, N. C., succeeding Harrison C. Givens, Jr., who was recently appointed vice-president-operations of Celanese International Corp.

Harry Stratton, New England representative for **Tyer Rubber Co.** for many years, has been elevated to an advisory position with the company. Active servicing of his accounts has been taken over by Gordon White.

3 times



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This larger flywheel effect plus extremely smooth torque acceleration gives smooth starting and smoother operation of the driven machine—resulting in better quality of material produced.

To get the full story of performance on this Fairbanks-Morse spinning frame motor, write Dept. TI-6, Fairbanks, Morse & Co., Chicago 5, Illinois, or 760 Lee St., S.W., Atlanta 3, Ga.

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SUPPLIERS News
WHAT THEY ARE DOING

A new, multi-million dollar laboratory building, designed especially for the conduct of research projects re-

lated to salt and its usage, has been completed by **The Morton Salt Co.**, at Woodstock, Ill.

Clark Equipment Co. has announced that it started operations in Richmond, Calif., about May 1 in a new 40,000 sq ft building. Among operations of the West Coast plant will be fabrication and installation of special attachments for fork lift trucks and the completion of the assembly of lift trucks by adding uprights and counterweights to equipment manufactured and shipped from its Battle Creek plant.

Continental Gin Co. announces the consolidation of its special products and industrial divisions, to become the industrial division under the direction of George C. Morgan, manager. Ralph Y. MacIntyre, former manager of the industrial division, has been named manager of sales development, a new department.

The new one-million-dollar textile research and development laboratory to be constructed at Mobile, Ala., by **Courtaulds (Alabama) Inc.** will include a spinning and weaving pilot plant which will be available to assist customers by creating new uses for the company's fibers, as well as the development of new fabrics employing Courtauld's fibers and blends of these with other fibers. It will also include facilities for color blending, study of fiber, yarn, and fabric properties, and dyeing and finishing.

Harnischfeger Corp. announces the appointment of Charles F. Parthum as advertising and sales promotion manager. Mr. Parthum was formerly with The Buchen Co. of Chicago.

Hayssen Manufacturing Co. has opened a new office at 1140 Broadway, New York City, to handle sales, installation, and maintenance of Hayssen equipment in the Greater Metropolitan and New England area. On display is a full line of operating Hayssen equipment. Regional sales manager A. F. Perry is in charge.

Benjamin R. Ebersman has been promoted from executive vice-president to president of **Hemphill Co.**

Assistant sales manager, southern division, for **E. F. Houghton & Co.** is A. J. Andre who was promoted from technical sales representative in the firm's Chicago Division. Mr. Andre will work out of Charlotte, N. C.

Hyster Co. will construct an additional plant in Danville, Ill., for the manufacture of its industrial lift trucks and tractor equipment.

After several years association with the parent company, Henry L. Young has rejoined the textile colors division of **Interchemical Corporation** as assistant to the division president.

The Dobeckmun Co. has been licensed to conduct operations under patents owned by National Research Corporation, relating to continuous vacuum metallizing of plastic films. The newly licensed processes and equipment will be used principally

Mr. Seidel

for the production of "Lurex-MM," the firm's non-tarnishing metallic yarns made from metallized "Mylar" polyester film. * * * Leon E. Seidel, formerly associate editor of TEXTILE INDUSTRIES, has joined the Lurex yarn division.

President E. J. Thomas has stepped up at the **Goodyear Tire and Rubber Co.** to assume authorities and responsibilities as chief executive officer. P. W. Litchfield continues as chairman of the board and serves on various management committees. In addition to becoming top ranking officer, Mr. Thomas also is chairman of a newly created policy committee composed of Mr. Litchfield, H. L. Hyde, and L. E. Spencer. * * * R. S. Wilson has been named executive vice-president, sales. * * * Replacing R. J. Ario as Charlotte, N. C., district manager for the industrial products division is H. F. Schweitzer who was promoted from field representative at Chicago. Mr. Ario was recently promoted to manager of Cleveland district.

W. D. Dodenhoff Co., Inc., recently elected Carl Baker and A. V. Moody vice-presidents in charge of industrial sales and machinery sales respectively. W. F. Leinweber, Jr., formerly vice-president and general manager, was named president, succeeding Mrs. W. D. Dodenhoff. H. C. Hard is the new secretary.

Following an announcement that **Eastman Chemical Products, Inc.** will produce Verel, a modified acrylic fiber, in addition to cellulose acetate fibers, a number of organizational changes in departments handling

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sales and service of textile fibers were made: Sales manager of the textile division is John R. Sherrill; assistant sales manager, acetate yarn and staples sales and sales service is W. T. Jackson; C. F. Earnhardt, Jr., assistant sales manager, Verel fiber, filter products, and sales development; Frank Ruddock, manager, Verel merchandising; and H. W. Smith, service repreesntative, Verel sales service.

The Chemstrand Corp. has opened a new district sales office at 3½ Overwood Road, Akron, Ohio, under the management of W. Curtis Melton, Jr., who will be assisted by Frank Wright, Jr. The Akron office will handle sales of both Acrilan acrylic fiber and Chemstrand nylon yarn. * * * Additions to personnel at Chemstrand's N. Y. general sales office are: Robert H. Hughes, Acrilan sales specialist, and Richard W. Nelson, a textile technician. Mr. Nelson, a specialist in the knitting field, is in the fabric development group. * * * Howard C. Greer has been elevated from treasurer to vice-president of finance and Arthur W. Lucas from assistant treasurer to treasurer. Dr. Cecil W. Gayler has been promoted from corporation production technical manager to manager of the technical sales service department.

Upon retirement of LeRoy F. Ott, president of **Standard Mill Supply Co.**, controlling interest in the firm was purchased by vice-president William H. Streit, who is now president. Harold B. Cameron is vice-president in charge of sales.

Kraemer Textiles, Inc., has named Zachary S. Norville, Jr., southern yarn sales representative, with offices in Dalton, Ga. Formerly, Mr. Norville was associated with Du Pont as nylon sales service representative.

Mr. Norville

Sun Chemical Corp. announces the appointment of Tarlton F. Parsons to its Warwick Chemical Co. division, where he will be responsible for converter and manufacturer relations and the promotion of all Warwick textile chemicals.

The new $75,000 **Machine Parts Corporation** shop at Anderson, S. C., will produce spur, bevel, and helical gears, loom motor pinions, card flat screws, ball bearing units, and many other textile machinery replacement parts. Henry Dixon is president and Tom Kesler is vice-president and sales manager.

The Chattanooga (Tenn.) Yarn Association has elected the following officers for 1956: President, Frank Carter of **Textiles-Incorporated;** vice-president, Hubert Fry of **Central Franklin Process Co.**; treasurer, Col. R. D. McDonald, yarn broker; and secretary, Harvey Davenport of **American & Efird Mills.** The association has scheduled its thirty-first annual golf tournament and banquet for Sept. 20-21 at Lookout Mountain.

Seated (left to right) Mr. Carter, Mr. Fry. Standing (left to right) Mr. Davenport, Mr. McDonald.

Southern States Equipment Corp. recently appointed James S. Meek to its design engineering staff. Formerly with Union Carbide Nuclear Co., Mr. Meek has had wide experience in product design.

In a program to expand marketing operations, **Square D Company** has elevated William Younger from merchandise sales and advertising manager to eastern sales manager and William Moriarty from manager of the York, Pa., field office to distributor sales specialist.

New director of research of **Owens-Corning Fiberglas Corporation** is Dr. A. C. Siefert, formerly chief glass technologist. Dr. L. P. Biefeld, former manager of research, was named technical director of the firm's research division. * * * Harrison C. Blankmeyer has been named manager of the Ashton, R. I., research laboratories of the textile products division.

Stephen T. Whittier, II, formerly associated with the Pneumafil Corporation, has joined **Saco-Lowell Shops** as assistant to A. K. Landau in the sales-research department.

Mr. Whittier

Pawtucket Spinning Ring Co., a subsidiary of Saco-Lowell Shops, has acquired the **Victor Ring Traveler Co.** which will continue to operate under the direction of E. R. Jerome, president and general manager. Saco-Lowell will coordinate the research efforts of the three organizations in seeking ways to better spinning.

Richmond Oil, Soap & Chemical Co., Inc., announces the withdrawal of Frank P. Murphy and Henry Kline as president and secretary respectively. They have also severed all financial connections with the company. William Alkus is now president and Morton W. Levi, secretary. Southern offices of the company have been consolidated in Charlotte, N. C., under the direction of John Gallman.

Getting the Most from Spinning Builder Motions

(Continued from page 187)

traverse above and below the horizontal center. The small number 1 represents the fulcrum, which is on a grooved slide rest on the cross-arm extending into the gear-head of the frame. This allows the fulcrum point of the builder to slide up or down.

In A it is necessary to bring the fulcrum point down, thus bringing

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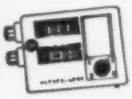

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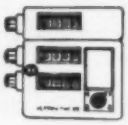

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the builder arm up. As the fulcrum position is lowered, the chain is let out, bringing the traverse relatively above normal starting position. The chain will have to be taken up to position the traverse at the normal starting point.

The dotted lines **(Fig. 4C)** represent the position taken by the builder in relation to the bobbin when fulcrum is lowered. This is a theoretical position to show the relationship of the horizontal center to the bobbin and to illustrate why it is necessary to take up on the chain. The actual position is indicated by solid black lines when the traverse is brought back to the normal starting position. However, the length of traverse did not change—only the relative position of the builder and fulcrum pivot in relation to the bobbin.

The opposite is true for **Fig. 4B.** If the limit of the fulcrum pivot on the slide has been reached and the desired taper has not been achieved, the Pitman roll stand can be slightly adjusted by sliding the stand toward the fulcrum, which brings the builder arm up, and vice versa.

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Part 2 of this series, "Straight Filling Wind," and the third and concluding installment, "Combination Wind," will appear in early issues of TEXTILE INDUSTRIES.

Taxes and Tyranny

(Continued from page 185)

store, the laundry, and the other people to whom the payroller owes money are now managing to collect it, but the federal government admits that it is either too helpless, or too lazy, to make its own collections like everybody else does.

Until everybody has to pay his own tax, and all of that tax, and he knows it is a tax, there is not the slightest hope for expecting any economy in government. No tax is an honest tax unless the man who pays it knows that he pays it, and no hidden tax is an honest tax. A small number of hidden taxes may be more or less inescapable, but the number of these should be very small, and if the politicians had the courage to do it, practically all taxes could be levied so that the man who pays them knows that he pays them.

So long as the officials of the government can say to a man "You take this money which I have taken away from that fellow over there who doesn't need it," we are going to keep on having government extravagance, and we have certainly got plenty of it. Nothing can stop it except a revolt of the taxpayer, and the hidden tax system does not encourage such a revolt. It does encourage inflation, from which we are now suffering and from which we apparently are going to continue to suffer.

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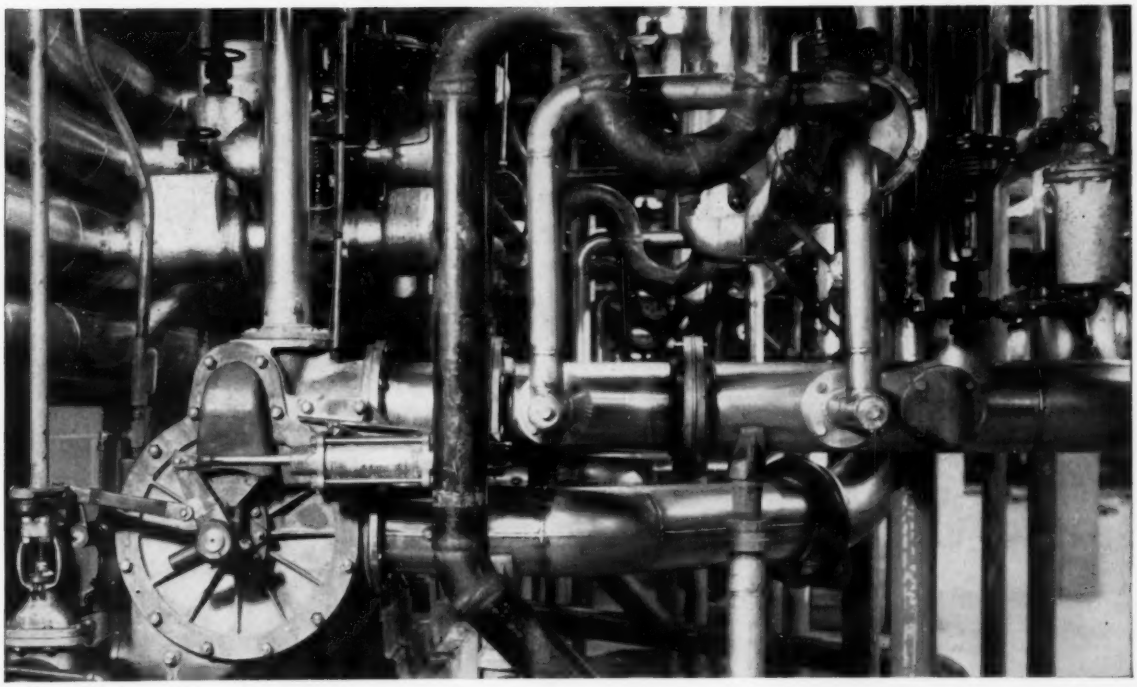

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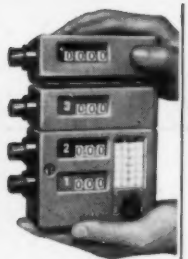

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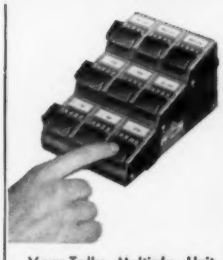

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